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## BOARD AGENDA

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### Board of Commissioners' Meeting

January 21, 2009

1:00 pm

**Call to Order**

**Pledge of Allegiance**

**Additions to the Agenda**

**Commissioners' Comments**

**Public Comment**

**Approval of Minutes December 17, 2008**

**I. Consent Calendar (Old Business)**

1. Approve Contract to purchase Clarifier Drives from Walker Process for an amount not to exceed \$78,235.

**II. Items requiring immediate action**

1. Approve Contract with Crom Corporation for a guaranteed lump sum price for the ground storage reservoir No. 1 repair in an amount not to exceed \$122,000.

**III. Discussion (New Business)**

1. None

**IV. Informational Reports**

1. Financial Report
2. Administration Report
3. Operations and Maintenance Report
4. Engineering Report

**V. Closed Executive Session**

None

**VI. Adjournment**





*Your Community-Owned and Operated System*  
998 Hunters Trail  
Anderson, SC 29625

**MINUTES OF THE  
ANDERSON REGIONAL JOINT WATER SYSTEM  
December 17, 2008**

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

**COMMISSIONERS PRESENT: Charlie Gibson, Sandy Springs; Rick Cotton, City of Clemson; Dyke Spencer, Powdersville; Douglas Locke, Broadway; Toddy Hopkins, West Anderson; Frank Turner, Hammond; Tim Hood, Town of Williamson; Duane Rogers, Big Creek; David Davis, Belton-Honea Path; Phillip Mishoe, Town of Central; Ned McGill, Starr-Iva; Jeff Caldwell, City of Anderson; Jerry Richey, Homeland Park, Richard Bork, Town of Pendleton**

**OTHERS PRESENT: Eddie Makison, ARJWS; Phil Parkins, CDM; Connie Finger, ARJWS; Ann Gates, ARJWS; Scott Willett, ARJWS; David Melton, ARJWS; Tommy Phillips, Broadway; Jerry Cox, Broadway; Benjie McGill, City of Clemson; Steve Wilson, West Anderson; John Moore, City of Anderson; Ray Chandler, Anderson Independent**

Chairman Jeff Caldwell called the meeting of Anderson Regional Joint Water System to order at 10:04 a.m. on December 17, 2008.

Chairman Caldwell opened the meeting with the Pledge of Allegiance.

There were no additions to the agenda.

Under Commissioners' comments, Chairman Caldwell, thanked the staff of ARJWS for the Christmas gifts. He also removed the 1<sup>st</sup> item requiring immediate action from the agenda. This item was the formal declaration of extreme drought condition with mandatory water use restrictions per ARJWS Drought Ordinance. Due to the recent

rains bringing the lake level up and to updates by the Corps, this item was placed on hold.

There were no public comments.

The minutes of the November 19, 2008 meeting were brought up for approval. Frank Turner made a motion and Charlie Gibson seconded to approve the minutes. Motion carried.

## **I. Consent Calendar (Old Business)**

### **1. Approve Final Design Contract for Electrical System Improvements with CDM for an amount not to exceed \$411,557.**

David Davis made a motion to approve final design contract for electrical system improvements with CDM for an amount not to exceed \$411,557. Richard Bork seconded and motion carried. A copy of this report is attached to the file copy of these minutes.

### **2. Approve Construction Management Services Contract for Transmission Improvements -Phase 1A with CDM for an amount not to exceed \$445,300.**

Mr. Turner made a motion to approve construction management services contract for transmission improvements-Phase 1A with CDM for an amount not to exceed \$445,300 and Dyke Spencer seconded. Motion carried. A copy of this report is attached to the file copy of these minutes.

### **3. Approve Contract for Transmission Improvements-Phase 1B (Lake Crossing) Preliminary Engineering Report with CDM for an amount not to exceed \$61,852.**

Rick Cotton made a motion as follows: The Base Scope of the Phase 1B Improvements that are part of the CDM PER includes a 20-inch lake crossing pipe and the minimum improvements necessary at each of the three pump stations to deliver 45 MGD all generally consistent with the improvements recommended by the Cities of Anderson and Clemson and their engineer, Design South, at an estimated cost of \$5,300,000, and to examine bid alternates and costs related to relocation of the Clemson Booster Pump Station. Mr. Spencer seconded and the motion carried. A copy of this report is attached to the file copy of these minutes.

## **II. Items requiring immediate action**

### **2. Approve Employee Christmas Bonus**

A motion was made by Mr. Gibson to approve an employee Christmas bonus in the amount of \$250 plus an amount sufficient to cover the normal taxes imposed. Mr. Turner seconded and motion carried. A copy of this report is attached.

3. Award Construction Contract for Transmission Improvements-Phase 1A to John D. Stephens, Inc. for an amount not to exceed \$5,398,228.31

Mr. Willett reported that twelve bids had been received on the transmission improvement project and five were within \$500,000 of the recommended alternative and the two top bidders were separated by less than \$30,000. Mr. Bork made a motion to authorize the Executive Director to execute a contract with John D. Stephens, Inc. to construct Phase 1A Transmission System Improvements, a transmission line from the Lake Hartwell Water Treatment Plant to Clemson Boulevard, for an amount not to exceed \$5,398,228.31. Mr. Gibson seconded and motion carried. A copy of this report is attached.

4. Resolution of the Anderson Regional Joint Water System Commission, the governing body of the Anderson Regional Joint Water System, South Carolina authorizing an application to the South Carolina Water Quality Revolving Fund Authority to finance improvements to its waterworks system for an amount not to exceed \$7,104,795.

Duane Rogers made a motion to approve the resolution and authorize the Chairman to sign the resolution and loan application on behalf of the Joint Water System seeking the financing of the Phase 1A Transmission System Improvements from the South Carolina Water Quality Revolving Fund. Mr. Gibson seconded and motion carried. A copy of this report is attached to the file copy of these minutes.

### III. Discussion (New Business)

1. Clarifier #1 Rebuild (Order Drive)

A recommendation was made to replace the existing flocculator and clarifier drive assemblies in Clarifier #1. The original plant equipment has experienced numerous failures. This will be placed on the consent calendar for the January meeting.

Chairman Caldwell, at this time, requested the January meeting be rescheduled from 10:00 a.m. on the 21<sup>st</sup> to 1:00 p.m. This was agreed to by all.

### IV. Informational Reports

1. Financial Report

2. Administration Report

3. Operations and Maintenance Report

The above reports are for information and for each member to review as written. A copy of each report is attached.

4. Engineering Report

Mr. Willett talked about the repair on Ground Storage Reservoir #1. It seems that CROM has been unable to effectively stop the leak. Mr. Willett said we are presently waiting for a bid from CROM to effectively buy the leak. He said this would be a better solution and would assure us that the leak would be repaired.

**V. Closed Executive Session**

None

**VI. Adjournment**

Having no other business David Davis made a motion to adjourn at 10:40 a.m. and Mr. Cotton seconded.

Respectfully Submitted,

David A. Davis  
Belton-Honea Path



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## BOARD MEMORANDUM

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January 13, 2009

### **Subject**

Replacement of drive assemblies in Clarifier No. 1

### **Recommendation**

Authorize the Executive Director to execute a contract with Walker Process Equipment to replace the flocculator and clarifier drives in Clarifier No. 1 for an amount not to exceed \$78,285.00.

#### *Alternatives:*

1. Defer replacement of drives

### **Fiscal Impacts**

Funds are available in the System Repair and Replacement account for replacement of the drive assemblies in Clarifier No. 1.

### **Discussion**

The flocculator and clarifier drive assemblies in Clarifier No. 1 are original plant equipment, circa 1967. The ARJWS has experienced numerous failures and recommends the replacement of these drives with new equipment. This will be the last of the major equipment up for refurbishing in the pre-filtered train.

Clarifier No. 2 drive assemblies were replaced with new drives in the Spring of 2008. As you may recall, the drives in Clarifier No. 2 failed in January 2008 and were beyond staff's ability to repair. The ARJWS initially recommended refurbishing the existing 40-year old drives but upon factory inspection, it was determined the drives were beyond factory repair. Due to the age and poor condition of the existing drives, new drives are being recommended for Clarifier No. 1 as well. The ARJWS is taking a proactive approach to replace these drives prior to experiencing another failure beyond repair. New drives will increase the reliability of Clarifier No. 1 and assist the water treatment plant in meeting settled water turbidity goals.

Prepared by: Jennifer H. Barrington, P.E., System Engineer  
Approved by: Scott Willett, Executive Director





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## BOARD MEMORANDUM

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January 13, 2009

### **Subject**

Approve contract for Reservoir No. 1 Repair Work

### **Recommendation**

Authorize Executive director to execute a contract with Crom Engineering and Construction Services for a guaranteed maximum price of \$122,000.

#### *Alternatives:*

1. Continue with a time and materials based contract.
2. Defer leak repair in Reservoir No. 1.

### **Fiscal Impacts**

Funds are available in the System Repair and Replacement account for the leak repair of Reservoir No. 1.

### **Discussion**

During an annual DHEC Sanitary Survey Report, DHEC representatives acknowledged that Reservoir No. 1 was leaking and should be repaired as soon as possible. Over the course of the past several years, the ARJWS has attempted to repair the leak in Reservoir No. 1 by a conducting a series of improvements which include pouring a new floor in the tank, removing and replacing the floor wall joint around the entire tank, multiple camera investigations, pouring a new floor in the sump area, injecting epoxy/mastec in floor and wall cracks/voids, and most recently additional repairs to the floor wall joint. The leak continues to resurface.

Staff has negotiated with Crom to “buy” the leak for a guaranteed maximum price. By authorizing a guaranteed maximum price for the leak, Crom would assume all responsibility and continue repairs until the leak is corrected. Crom previously quoted a price of \$48,000 to replace the baffle curtain. With authorization of the guaranteed maximum price for the leak, ARJWS will issue a total contract amount of \$170,000 to Crom for replacement of the baffle curtain and repair of the leak.

Prepared by: Jennifer H. Barrington, P.E., System Engineer  
Approved by: Scott Willett, Executive Director





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## BOARD MEMORANDUM

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January 13, 2009

### Subject

December 2008 Financial Report

### Discussion

The attached tables identify December spending, encumbrances and deposits to the Pumped Repair and Replacement Account and the System Repair and Replacement Account. At the end of December, the Pumped R&R Account had an available balance of \$265,112.13 net of encumbrances. The System R&R Account had an available balance of \$508,046.70 net of encumbrances. The Operating Fund had a balance of \$630,649.34. Reserves of \$300,000 are invested in secured notes. Total unrestricted cash available is \$1,833,985.71 corresponding to 88.06 days of cash based on the adopted Budget.

	Balance (11/30/2008)	Balance (12/31/2008)
<b>Pumped R&amp;R</b>	<b>\$258,257.59</b>	<b>\$265,112.13</b>
<b>System R&amp;R</b>	<b>\$443,015.38</b>	<b>\$508,046.70</b>
<b>Operating Fund</b>	<b>\$572,714.34</b>	<b>\$630,649.34</b>
<b>Rate Stabilization fund</b>	<b>\$194,886.78</b>	<b>\$130,177.54</b>
<b>Reserves</b>	<b>\$300,000.00</b>	<b>\$300,000.00</b>
<b>TOTAL Unencumbered Cash</b>	<b>\$1,768,894.09</b>	<b>\$1,833,985.71</b>
<b>FY Op Budget</b>	<b>\$7,601,307.00</b>	<b>\$7,601,307.00</b>
<b>Days of Cash</b>	<b>84.94</b>	<b>88.06</b>

A review of the December Profit and Loss Statement shows that actual expenses were 8.4% under budget projections for the month. Current (6+6) annual budget estimates are forecasting expenditures 4.0% under budget and on target revenue generation.

Approved by: Scott Willett, Executive Director

Attachments: Pumped Repair and Replacement Account Summary  
System Repair and Replacement Account Summary  
Profit and Loss Budget vs. Actual

**PUMPED REPAIR & REPLACEMENT ACCOUNT**

December 31, 2008

<u>DATE</u>	<u>PAYEE</u>	<u>DEPOSIT</u>	<u>AMOUNT</u>	<u>BALANCE</u>
12/1/08	BALANCE BROUGHT FORWARD			258,257.59
12/24/08	DEPOSIT (O & M)	6,799.33		265,056.92
12/31/08	DEPOSIT (INTEREST)	55.21		265,112.13
	LESS EMCUMBERED FUNDS			-
	BALANCE UNEMCUMBERED FUNDS			<u>265,112.13</u>

# SYSTEMS REPAIR & REPLACEMENT ACCOUNT

December 31, 2008

<u>DATE</u>	<u>PAYEE</u>	<u>DEPOSIT</u>	<u>AMOUNT</u>	<u>BALANCE</u>
12/01/08	BALANCE BROUGHT FORWARD			665,838.38
12/08/08	MICHAEL B. BURRELL, ATTORNEY		10.00	665,828.38
12/08/08	UTILITY LAND SERVICE, LLC		587.51	665,240.87
12/15/08	CROM ENGINEERING & CONTRUCTION SERVICES		36,259.75	628,981.12
12/15/08	RICHIE L. & MARY E. PIERCE		1,080.00	627,901.12
12/22/08	THE PALMETTO BANK (MASTERCARD)		1,699.00	626,202.12
12/24/08	DEPOSIT (O & M)	100,303.81		726,505.93
12/29/08	CAMP DRESSER & MCKEE, INC		45,072.70	681,433.23
12/31/08	DEPOSIT (INTEREST)	143.47		681,576.70
	<b>LESS ENCUMBERED FUNDS</b>			<b><u>173,530.00</u></b>
	<b>BALANCE UNENCUMBERED FUNDS</b>			<b><u>508,046.70</u></b>

<u>ENCUMBERENCES</u>	<u>BUDGET</u>	<u>BALANCE</u>
FINAL DESIGN OF PHASE 1 TRANSMISSION IMPROVEMENTS	354,900.00	-
REBUILD CLARIFIER #2	268,670.00	3,630.00
TELEMETRY UPGRADES	169,900.00	169,900.00
		<b><u>173,530.00</u></b>



	Year-to-Date				Budget Forecast	
	Dec 08	Budget	Actual	Budget	6+6 Estimate	Budget
<b>Ordinary Income/Expense</b>						
<b>Income</b>						
5000 · O & M Revenue						
6001 · FEES O & M -TOTAL						
6001.1 · Base O & M Subtotal	0.00	290,717.66	0.00	1,744,306.00		
6001.2 · Pumped O & M Subtotal	0.00	20,865.66	0.00	125,194.00		
<b>Total 6001 · FEES O &amp; M -TOTAL</b>	<b>0.00</b>	<b>311,583.32</b>	<b>0.00</b>	<b>1,869,500.00</b>		
6002 · FEES CAP	357,010.58		2,142,063.48			
6000 · O & M Revenue - Other	244,055.54		1,602,053.14			
<b>Total 6000 · O &amp; M Revenue</b>	<b>601,066.12</b>	<b>311,583.32</b>	<b>3,744,116.62</b>	<b>1,869,500.00</b>		
6010 · FEES- MISC. INCOME	8,900.00	3,750.00	28,973.75	22,500.00		
6015 · TRANSFERS FROM RSF	0.00	21,583.33	129,500.02	129,500.02		
6020 · FEES - DEBT SERVICE COVERAGE	0.00	318,108.91	0.00	1,908,653.50		
<b>Total Income</b>	<b>609,966.12</b>	<b>655,025.58</b>	<b>3,903,590.39</b>	<b>3,930,153.52</b>	<b>7,833,743.75</b>	<b>7,880,306.72</b>
<b>Expense</b>						
4000 · Reconciliation Discrepancies	0.00		0.00		0.00	0.00
8010 · SALES TAX ACCRUAL	0.00	366.66	493.15	2,200.00	2,693.11	4,389.92
8050 · ADVERTISING -	764.00	208.35	3,328.10	1,250.00	4,578.20	2,500.20
8060 · OFFICE SUPPLIES/EXPENSES	1,086.08	874.99	5,509.68	5,250.00	10,759.62	10,499.88
8065 · DUES/SUBSCRIPTIONS	1,998.70	658.33	4,032.66	3,950.00	7,982.64	7,899.96
8070 · BANK SERVICE CHARGES	-90.00	33.33	-601.68	200.00	-401.70	399.96
8075 · Cash over/short	0.00		-595.00		-595.00	0.00
8080 · DEBT SVC 2002 Bond Series	360,295.91	330,271.25	1,861,255.07	1,981,627.50	3,842,682.57	3,963,255.00
8081 · DEBT SVC 2005 Bond Series	27,105.88	27,105.83	162,635.28	162,635.00	325,270.26	325,269.96
8090 · AUTO/TRUCK EXPENSE	1,282.53	2,466.69	12,970.72	14,800.00	27,770.86	29,600.28
8110 · LICENSES/PERMITS	0.00	83.33	1,850.00	3,200.00	2,349.98	999.96
8120 · Lease/Purchase Miox Gen. Equip	0.00	7,333.33	-37,596.34	44,000.00	6,403.64	87,999.96
8130 · STATIONARY/PUBLICATIONS	0.00	25.00	67.50	150.00	207.50	300.00
8140 · SEMINARS & CONVENTIONS	665.00	483.33	1,265.00	2,900.00	4,164.98	5,799.96
8160 · POSTAGE/FREIGHT	291.28	225.00	1,130.96	1,350.00	2,480.96	2,700.00
8160 · FILM & PROCESSING	0.00	8.33	0.00	50.00	49.98	99.96
175 · METER REPAIR	61.09	758.32	4,747.15	4,550.00	9,297.07	9,099.84
8180 · SECURITY	0.00	66.66	203.98	400.00	603.94	799.92
8200 · PUMP MAINT./REPAIR	0.00	3,000.01	10,606.39	18,000.00	28,606.45	36,000.12
8220 · PROFESSIONAL FEES	5,668.11	40,000.00	66,216.98	240,000.00	306,216.98	480,000.00
8300 · INSURANCE	2,036.90	7,225.01	19,265.64	43,350.00	62,615.70	86,700.12
8400 · LABORATORY	4,007.35	4,700.00	30,652.32	28,200.00	58,852.32	56,400.00
8500 · WATER TREATMENT	3,361.14	3,424.99	57,426.27	20,550.00	77,976.21	41,099.88
8600 · PAYROLL EXPENSES	101,244.43	106,808.33	610,148.30	639,650.00	1,249,798.28	1,279,299.96
8700 · TELEPHONE	4,981.54	3,550.03	24,904.90	21,300.00	46,205.08	42,600.36
8800 · MISCELLANEOUS	2,005.29	1,625.01	11,662.15	9,750.00	21,412.21	19,500.12
8820 · CUSTODIAL CARE	1,099.02	766.66	3,037.40	4,800.00	7,637.36	9,199.92
8830 · REPAIRS/MAINTENANCE	8,203.95	2,891.69	38,718.70	17,350.00	56,068.84	34,700.28
8840 · CHEMICAL SUPPLIES	26,264.70	27,275.00	209,558.73	163,650.00	373,208.73	327,300.00
8850 · TANKS/STANDPIPES/RESEVOIRS	699.56	11,358.33	77,727.01	68,150.00	145,876.99	138,299.96
8860 · UTILITIES	56,366.83	80,975.01	464,952.36	485,850.00	950,802.42	971,700.12
8870 · TRAVEL	0.00	350.00	2,261.85	2,100.00	4,381.85	4,200.00
8871 · MANAGER'S EXPENSE	109.33	100.00	159.86	600.00	799.86	1,200.00
8872 · BOARD EXPENSE	584.36	150.00	683.26	900.00	1,583.26	1,800.00
8873 · STAFF INCENTIVE PROGRAM	0.00	50.00	0.00	300.00	300.00	600.00
8874 · TRAINING & EDUCATION REIMBURSE	1,451.96	683.33	4,434.11	4,100.00	8,534.09	8,199.96
8875 · MEALS/ENTERTAINMENT	110.86	200.00	965.17	1,200.00	2,165.17	2,400.00
8950 · INTEREST EXPENSE	0.00		5,924.81		5,924.81	0.00
<b>Total Expense</b>	<b>609,635.80</b>	<b>665,902.13</b>	<b>3,659,992.44</b>	<b>3,998,112.50</b>	<b>7,655,405.22</b>	<b>7,890,825.56</b>
<b>Net Ordinary Income</b>	<b>330.32</b>	<b>-10,876.57</b>	<b>243,597.95</b>	<b>-67,958.98</b>	<b>178,338.53</b>	<b>-130,518.84</b>
<b>Other Income/Expense</b>						
<b>Other Income</b>						
6030 · Pumped R&R	6,799.34	6,806.91	40,796.04	40,841.50	81,637.50	81,682.92
6040 · SYSTEM R&R	100,303.83	100,406.25	601,822.98	602,437.50	1,204,260.48	1,204,875.00
8900 · INTEREST INCOME	0.00		4,769.57		4,769.57	0.00
8910 · MISCELLANEOUS INCOME	0.00		12,983.16		12,983.16	0.00
9510 · GAIN/LOSS ON DISPOSAL OF ASSETS	0.00		5,529.25		5,529.25	0.00
<b>Total Other Income</b>	<b>107,103.17</b>	<b>107,213.16</b>	<b>665,901.00</b>	<b>643,279.00</b>	<b>1,309,179.96</b>	<b>1,286,557.92</b>
<b>Net Other Income</b>	<b>107,103.17</b>	<b>107,213.16</b>	<b>665,901.00</b>	<b>643,279.00</b>	<b>1,309,179.96</b>	<b>1,286,557.92</b>
<b>Net Income</b>	<b>107,433.49</b>	<b>96,336.59</b>	<b>779,998.93</b>	<b>575,320.02</b>	<b>1,358,018.47</b>	<b>1,156,039.08</b>



ANDERSON REGIONAL

JOINT WATER SYSTEM

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

**BOARD MEMORANDUM**

January 13, 2009

**Subject**

December Administration Report

**Discussion**

Billing

All payments for the month of November have been received. Meters were read on December 31st, with usage down approximately 6.94% from last month (for the same number of days), and down about 5.06% for the same period/same number of days last year. December bills were mailed on January 6th.

AGENCY	PREV.YR SAME MONTH	LAST MONTH	CURRENT MONTH
# of Billing Days	34	32	30
Anderson	142,549,831	130,745,734	130,566,854
Big Creek	29,200,000	26,700,000	23,600,000
Broadway	23,802,300	21,280,000	20,058,700
Clemson	50,400,000	57,600,000	46,000,000
Clemson University	22,700,000	27,100,000	18,200,000
Hammond	49,000,000	49,200,000	41,300,000
Homeland Park	19,810,000	19,050,000	17,687,000
Pendleton	10,600,000	9,560,000	7,660,000
Powersville	8,110,000	9,010,000	5,930,000
Sandy Springs	50,693,000	39,744,000	29,663,000
Starr-Iva	36,300,000	38,100,000	30,000,000
West Anderson	41,916,000	38,846,000	36,930,000
Williamston	25,500,000	23,300,000	20,100,000
<b>TOTALS:</b>	<b>510,581,131</b>	<b>490,235,734</b>	<b>427,695,554</b>

There were no Seasonal Surplus Charges for the month of December. Totals-to-date remain the same: Gallons 183,994,000--Dollars \$212,630.48.

Prepared by: Connie Finger, Business Manager  
 Approved by: Scott Willett, Executive Director





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## BOARD MEMORANDUM

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January 13, 2009

### **Subject**

December 2008 Operations and Maintenance Report

### **Discussion**

#### *Operations*

As of January 5, 2009 Lake Hartwell was at 641.74 ft above mean sea level. This is 18.26 feet below full pool. Raw water is being blended from the second and third gates of the intake structure. There is 6.70 feet of water above the middle intake gate. Water temperature at the second gate is fifty- four degrees. As water temperatures decrease, processes with respect to settled water turbidity goals are more difficult to achieve. The Joint Water System reached 93.5% settled water turbidity goal for the month of December. The Joint Water System has achieved 98.1% of yearly settled water turbidity goals for 2008, exceeding the AWOP goal of 95%. Raw water quality remains generally good. Raw water turbidity is slightly higher than normal, due to much needed rain. Raw water, settled water, and finished water pH levels are normal. The maximum day for December was 36.0% of finished water capacity.

In addition to quality sampling for the Lake Hartwell Water Treatment Plant, Joint Water System staff processed 175 total coliform samples for local entities.

### **Water Production Data**

	Average	Minimum	Maximum	Total
Raw Water (MG)	15,213,000	12,281,000	17,728,000	470,651,000
Finished Water (MG)	14,144,000	12,024,000	15,415,000	437,473,000
Finished Max Capacity	33.00%	28.10%	36.00%	33.60%

NOTE: Percentages are finished water capacities.

### Water Quality Data

	Raw	Settled	Finished
pH	7.05	6.47	6.99
Turbidity (NTU) Range	3.3 to 23.0	0.47 to 2.30	0.05 to 0.09
Turbidity (NTU) Average	9.20	1.11	0.07
Turbidity (NTU) Exceedance	N/A	0.07%	0%
Residual Disinfectant (ppm)	N/A	0.84	1.25

NOTE: Area Wide Optimization Program Goal equals 1.0 NTU or less for settled water turbidity 95% of the time. Regulations require 1.0 NTU or less for finished water.

### Weather Data

	Minimum	Maximum	Total
Rainfall	0.00	1.74 in.	4.00 in.
Temperature	19 °F	77 °F	N/A
Humidity	9%	100%	N/A

### Power Consumption

Month	On Peak kW	Off Peak kW	Total kW	Finished Water MG	\$ per MG
Dec 2006	198,400	721,600	920,000	493.18	\$87.71
Jan 2007	223,600	858,000	1,091,600	423.80	\$101.97
Feb 2007	194,400	751,600	946,000	530.28	\$100.48
Mar 2007	210,800	890,800	1,101,600	682.56	\$75.15
May 2007	238,400	1,138,000	1,376,400	644.84	\$82.78
June 2007	236,800	979,200	1,216,000	777.26	\$87.41
July 2007	224,000	1,187,200	1,411,200	684.12	\$91.16
Aug 2007	226,800	1,717,200	1,438,000	639.85	\$95.83
Sept 2007	223,200	1,040,800	1,264,000	582.21	\$82.42
Oct 2007	208,800	984,400	1,193,200	467.32	\$78.86
Nov 2007	204,400	820,400	1,024,800	499.39	\$86.63
Dec 2007	191,600	841,200	1,032,800	453.93	\$79.90
Jan 2008	215,600	834,200	1,050,400	481.67	\$113.98
Feb 2008	178,400	735,400	914,000	502.17	\$75.94
Mar 2008	176,400	803,400	979,600	589.62	\$76.95
April 2008	197,600	845,200	1,042,800	765.84	\$70.23
May 2008	254,400	1,220,440	1,474,840	709.91	\$82.82
June 2008	230,000	1,222,800	1,452,800	670.71	\$90.57
July 2008	242,800	1,154,400	1,397,200	590.15	\$90.46
Aug 2008	222,800	981,600	1,204,400	555.31	\$93.18
Sept 2008	183,200	940,400	1,123,600	472.21	\$92.07
Oct 2008	183,200	859,200	1,042,400	437.47	\$99.17
Nov 2008	155,200	779,200	934,400	481.29	\$95.49

Operations staff continues to optimize energy consumption at the Water Treatment Plant. Efforts for the last year have resulted in a 6.3% decrease in on-peak power consumption, a decrease in total energy consumption of 2.8% while producing 2.8% less water than the previous year due to conservation restrictions. This has allowed the Joint Water System to completely absorb the most recent Duke Energy rate increase of 11% and maintain its energy cost at approximately \$87.90 per million gallons produced.

### ***Maintenance***

- Five batteries were replaced for backup generators 1 & 2.
- The stainless steel pipe section for the replacement check valve on Raw Water Pump 2 has been received. Replacement will be scheduled soon.
- Speakers and gate controls have been installed in the front offices. Monitors remain to be installed.
- Clarifier # 3 was placed back into service to allow for more settling time. Turbidities have been somewhat higher during periods of heavy rain experienced recently.
- The transmission line leak on 81 North appeared to have been caused by a shifting thrust block. This line has been operating at an increased pressure due to changes in demand on this side of the system. An altitude valve was placed back into service at the Hampton Road Tank to prevent overflows. When this valve closes, pressures increase by approx 30 psi due to pumping into a relatively closed system. This problem is currently being evaluated.
- Replacement materials used during the main break have been ordered. Also a list of minimum repair parts for each pipe size within the system is being compiled. Our goal is to have at least enough repair materials on hand to repair a leak on each pipe size from 16 to 30 inches.
- Projects scheduled for the next few months include the completion of the refurbishment of Filter #2, salvage of the old caustic tank and the re installation of Raw Water Pump 4.
- Paddles for Clarifer #3 should be received soon. ARJWS crews will perform the installation.

Prepared by: Eddie Makison, Maintenance Manager  
David Melton, WTP Superintendent  
Approved by: Scott Willett, Executive Director





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## BOARD MEMORANDUM

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January 9, 2009

### **Subject**

December 2008 Engineering Update

### **Discussion**

#### ***Transmission System Improvements***

Regarding Phase IA, all permits except the SCDHEC 401 water quality certification have been issued. Right of way acquisition is currently underway. The Notice of Intent to Award has been issued to the contractor. The contractor is currently developing shop drawings and looks forward to mobilizing the end of February. A loan commitment letter from the Budget & Control Board and a formal project approval letter from SCDHEC are expected the week of January 19, 2009. The SRF loan is scheduled to close mid-February. A formal scope has been approved with CDM to provide Engineering Services for the development of a PER for Phase IB (Lake Crossing). A kick-off meeting is scheduled to occur January 12, 2009.

#### ***Reservoir No. 1***

Initial repair efforts for Ground Storage Reservoir #1 were unable to effectively stop the leak. Crom has provided a scope and cost for effectively guaranteeing the leak repair. Timely repair of this tank is essential to maintaining overall system reliability during the summer peak season.

#### ***Remote Communications Study***

MR Systems is currently preparing submittals to begin procurement for the remote communications equipment.

#### ***Comprehensive Electrical Improvements***

A kick-off meeting is scheduled for January 23, 2009.

#### ***Clarifier No. 1***

A formal quote has been received from Walker Process Company for replacing the clarifier and flocculator drives in Clarifier No. 1. An Invitation to Bid will be advertised the end of January for the construction services to remove existing drives and install new drives in Clarifier No. 1.

Prepared by: Jennifer H. Barrington, P.E., System Engineer  
Approved by: Scott Willett, Executive Director