



Trojan UV System



Trojan UV System

Other observations

- The City noted they only have 2 maintenance staff currently for the WTP; the number of operations staff was not immediately known, but many of the operators are currently working 16 hour days.
- The plant does have some capability for flow pacing, but the operators do not leave it in auto; they feel more comfortable in manual mode and often revert there. There is an ongoing design project for continuous monitoring and improved automation of the plant, including chemical feed that is ~60% complete. This project is estimated at about \$3M by Jackson's engineer.
- The City noted they do not have sufficient instrumentation maintenance technicians to maintain instruments. As a result of instrumentation challenges, the City noted that they often have to gauge feed rates by sight.
- The City noted that spare parts are a big issue for them. Having adequate ones on hand is a challenge and there is a \$300K line item in the priority project list for this item.
- Overall, the WTP needs a major clean-up. The plant suffers from lack of maintenance. In particular, the sedimentation basins and clearwells were noted by plant staff to have significant build-up of solids.

Ultrafiltration Train

- For the ultrafiltration train, details were not covered due to time available on the site visit, but generally, following the raw water pump station, the flow is directed to a chamber at the membrane building where ACH is added prior to flocculation and membrane filtration. The City did note they are currently not feeding potassium permanganate on the membrane side due to a broken water line and inactive pump on chemical feed system for that train.
- During the winter of 2020, a hard freeze caused multiple membrane filtration unit failures. The City is currently covering the membrane filtration system with a building; a building was not originally installed to save on construction cost.
- The driver for going to ultrafiltration at the time of installation was the plant footprint available and levels of manganese removal possible with the treatment scheme. Photos below are from quick walk-through of equipment area; influent basins/membranes were not visited due to time and ongoing construction.





**MEMORANDUM
PUBLIC WORKS DEPARTMENT**

TO: Marlin King, Director of Public Works
Louis Wright, CAO
Toya Martin, Director of Human Resources
Ora Stokes, Human Resource Officer II

FROM: Charles Williams Jr., PE, PhD, City Engineer

CW 10/27/2021

CC: Mary D. Carter, Deputy Director of Public Works
Erica Thomas, Fiscal Officer
Cynthia Staffney, Fiscal Officer

DATE: October 27, 2021

RE: Recruitment and Retention Policy for Water Treatment Plants

The attached Water Treatment Recruitment and Retention Policy are being submitted for your approval and for immediate implementation by the Public Works Department.

It has been very difficult to recruit and retain qualified Water Plant Operators. We have lost several experienced Class A Operators due to retirement, other employment opportunities, and low wages compared to other Municipalities within the State of Mississippi and surrounding States. The entry level salary for an Operator I position attracts primarily high school graduates with limited or no experience. The city must invest six years of training in a high school graduate to qualify him/her to merely meet the qualifications to take the Class A examination. Additional time and monetary resources are invested if they do not pass the examination on the first try.

However, college graduates in the applied science are eligible to take the Class A examination after one year of experience in a Class A Water Plant. This policy will aid in attracting the "best qualified" candidates. It is critical that we take this action immediately with the vast number of openings at both plants and to stay in compliance with the State Department of Health.

We are positioned to have twelve water operators at each of the two plants. The Department of Health requires a Class A Operator on duty during all hours of operations. We are facing a severe situation that needs to be addressed proactively. Currently, we have six class "A" licensed operators between the two

plants that are in operations twenty-four (24) hours a day, 365 days a year. Our current operators are working more than one shift and covering empty shifts due the shortage of Class A operators at each plant and working more than one job just to keep up with the cost of living in Jackson that in turns puts the city's water at risk by having tired semi alert operators watching the water process. This poses a safety hazard not only to the water process but our operators as well. By state (MSDH) and federal (EPA) regulations an "A" class licensed operator must be on grounds at all times in order for an "A" class water treatment plant to operate. Both water treatment plants for the City of Jackson must operate 24 hours 7 days a week 365 days of the year to supply water to the citizens of Jackson. In the past two years we have lost five "A" class licensed operators from the City of Jackson due to pay. We must address this salary issue to attract more qualified applicants and retain current "A" class licensed operators or run the risk of facing violations and fines for the City of Jackson from State and Federal agencies. If we don't address this situation the City of Jackson Water Treatment plants will be forced to shut down.

Recruiting operators and maintaining operators at this plant is a tedious task. Some of the operators take the examination and pass the test and resign from the City immediately afterwards. The spent time and the money and many resources in recruiting and maintaining operators here at the plant and then we lose them. I propose when an operator takes the examination and pass the test, that they must stay employed with the City at least three (3) years. An Operator with a degree must possess or obtain within 18 months of employment a valid Class A Water Works Certificate. An Operator with a high school diploma or GED must possess or obtain within 42 months of employment a valid Class A Water Works Certificate. If an operator does not obtain a Class A Water Works Certificate within required months, he/she will result up to and including dismissal.

Your immediate approval is needed to help retain our current Class A certified operator staff who are contemplating employment with other surrounding municipalities within the Jackson metro area due to higher salaries. I have attached a Salary Survey of Southeastern Cities with similar treatment plants along with a Budget Analysis outlining the impact on the current operation budget of the Water Treatment Plants.

The Department of Public Works is making every effort to recruit and retain qualified and competent water treatment operators. Our goal is to maintain a competitive salary structure compared to water treatment systems in the Southeastern Region. With the critical need to recruit, hire and maintain Class A Certified Water Plant Operators, adjustments must be made in the current starting rate of Water Plant Operators I's, Water Plant Operator II's, Senior Water Plant Operators, Water Plant Operation Supervisor and Water Plant Maintenance Supervisor. Employees occupying these classifications will be adjusted in accordance with the guidelines set forth in this policy.

Recommendations are as follows:

Starting Rate for Water Plant Operator I:

- Step 1 (\$34,383.26): High School graduate and/or GED with no prior experience.
- Step 2 (\$35,979.84): High School graduate and/or GED with at least four (4) years' experience in a Class A or B Water Treatment System.
- Step 3 (\$37,657.45): Bachelor's degree in engineering or applied science from an accredited college or university.

NOTE: Once the employee obtains Class A Water Certification, will be promoted to Water Plant Operator II (see rates below).

Starting Rate for Water Plant Operator II:

- Step 3.5 (\$40,310.37): Bachelor's degree in engineering or applied science with a Class A Water Certification.
- Step 3.5 (\$40,310.37): High School Graduate and/or GED with six (6) years' experience in Class A or B water system with a Class A Water Certification.

Current Water Plant Operator II's will be adjusted in accordance with above guidelines.

Starting Rate for Senior Water Plant Operator:

Minimum 3.5 (\$44,150.66): Class A Water Certification and three years' experience as a Class A licensed operator in a Class water systems and function as a shift leader. Current Senior Water Operators salaries will be adjusted to ensure fairness and equity.

NOTE: The Water Plant Operations Supervisor and Water Plant Maintenance Supervisors' salary will be adjusted to a rate that will maintain a distinction between operators and supervisory staff at the Water Treatment Plants.

Proposed Pay Adjustment for Water Operators @ OB Curtis WTP & JH Fewel WTP

Water Plant Operator 1	Pay Plan 2015	Salary 2015	2% Salary Adjustment 2018	Proposed Salary Adjustment @ 30%
Step 1.0	\$ 997.31	\$ 25,930.06	\$ 26,448.66	\$ 34,383.26
Step 1.5	\$ 1,020.20	\$ 26,525.20	\$ 27,055.70	\$ 35,172.42
Step 2.0	\$ 1,043.62	\$ 27,134.12	\$ 27,676.80	\$ 35,979.84
Step 2.5	\$ 1,067.66	\$ 27,759.16	\$ 28,314.34	\$ 36,808.65
Step 3.0	\$ 1,092.28	\$ 28,399.28	\$ 28,967.27	\$ 37,657.45
Step 3.5	\$ 1,117.50	\$ 29,055.00	\$ 29,636.10	\$ 38,526.93
Step 4.0	\$ 1,143.39	\$ 29,728.14	\$ 30,322.70	\$ 39,419.51
Step 4.5	\$ 1,169.89	\$ 30,417.14	\$ 31,025.48	\$ 40,333.13
Step 5.0	\$ 1,197.08	\$ 31,124.08	\$ 31,746.56	\$ 41,270.53
Water Plant Operator 2				
Water Plant Operator 2	Pay Plan 2015	Salary 2015	2% Salary Adjustment 2018	Proposed Salary Adjustment @ 30%
Step 1.0	\$ 1,043.05	\$ 27,119.30	\$ 27,661.69	\$ 35,960.19
Step 1.5	\$ 1,067.05	\$ 27,743.30	\$ 28,298.17	\$ 36,787.62
Step 2.0	\$ 1,091.66	\$ 28,383.16	\$ 28,950.82	\$ 37,636.07
Step 2.5	\$ 1,116.90	\$ 29,039.40	\$ 29,620.19	\$ 38,506.24
Step 3.0	\$ 1,142.74	\$ 29,711.24	\$ 30,305.46	\$ 39,397.10
Step 3.5	\$ 1,169.23	\$ 30,399.98	\$ 31,007.98	\$ 40,310.37
Step 4.0	\$ 1,196.39	\$ 31,106.14	\$ 31,728.26	\$ 41,246.74
Step 4.5	\$ 1,224.24	\$ 31,830.24	\$ 32,466.84	\$ 42,206.90
Step 5.0	\$ 1,252.77	\$ 32,572.02	\$ 33,223.46	\$ 43,190.50
Senior Water Plant Operator				
Senior Water Plant Operator	Pay Plan 2015	Salary 2015	2% Salary Adjustment 2018	Proposed Salary Adjustment @30%
Step 1.0	\$ 1,141.50	\$ 29,679.00	\$ 30,272.58	\$ 39,354.35
Step 1.5	\$ 1,167.97	\$ 30,367.22	\$ 30,974.56	\$ 40,266.93
Step 2.0	\$ 1,195.08	\$ 31,072.08	\$ 31,693.52	\$ 41,201.58
Step 2.5	\$ 1,222.89	\$ 31,795.14	\$ 32,431.04	\$ 42,160.36
Step 3.0	\$ 1,251.39	\$ 32,536.14	\$ 33,186.86	\$ 43,142.92
Step 3.5	\$ 1,280.62	\$ 33,296.12	\$ 33,962.04	\$ 44,150.66
Step 4.0	\$ 1,310.58	\$ 34,075.08	\$ 34,756.58	\$ 45,183.56
Step 4.5	\$ 1,341.28	\$ 34,873.28	\$ 35,570.75	\$ 46,241.97
Step 5.0	\$ 1,372.74	\$ 35,691.24	\$ 36,405.06	\$ 47,326.58
Water Plant Maintenance Supervisor				
Water Plant Maintenance Supervisor	Pay Plan 2015	Salary 2015	2% Salary Adjustment 2018	Proposed Salary Adjustment @30%
Step 1.0	\$ 1,308.39	\$ 34,018.14	\$ 34,698.50	\$ 45,108.05
Step 1.5	\$ 1,339.04	\$ 34,815.04	\$ 35,511.34	\$ 46,164.74
Step 2.0	\$ 1,370.46	\$ 35,631.96	\$ 36,344.60	\$ 47,247.98
Step 2.5	\$ 1,402.66	\$ 36,469.16	\$ 37,198.54	\$ 48,358.11
Step 3.0	\$ 1,435.66	\$ 37,327.16	\$ 38,073.70	\$ 49,495.81
Step 3.5	\$ 1,469.46	\$ 38,205.96	\$ 38,970.08	\$ 50,661.10
Step 4.0	\$ 1,504.13	\$ 39,107.38	\$ 39,889.53	\$ 51,856.39
Step 4.5	\$ 1,539.66	\$ 40,031.16	\$ 40,831.78	\$ 53,081.32
Step 5.0	\$ 1,576.08	\$ 40,978.08	\$ 41,797.64	\$ 54,336.93
Water Plant Operations Supervisor				
Water Plant Operations Supervisor	Pay Plan 2015	Salary 2015	2% Salary Adjustment 2018	Proposed Salary Adjustment @30%
Step 1.0	\$ 1,369.66	\$ 35,611.16	\$ 36,323.38	\$ 47,220.40
Step 1.5	\$ 1,401.85	\$ 36,448.10	\$ 37,177.06	\$ 48,330.18
Step 2.0	\$ 1,434.81	\$ 37,305.06	\$ 38,051.16	\$ 49,466.51
Step 2.5	\$ 1,466.62	\$ 38,132.12	\$ 38,944.76	\$ 50,633.19
Step 3.0	\$ 1,503.28	\$ 39,085.28	\$ 39,866.99	\$ 51,827.08
Step 3.5	\$ 1,538.78	\$ 40,008.28	\$ 40,808.45	\$ 53,050.98
Step 4.0	\$ 1,575.16	\$ 40,954.16	\$ 41,773.24	\$ 54,305.22
Step 4.5	\$ 1,612.47	\$ 41,924.22	\$ 42,762.70	\$ 55,591.52
Step 5.0	\$ 1,650.70	\$ 42,918.20	\$ 43,776.56	\$ 56,909.53

WATER PLANT OPERATORS

CITY/ENTITY	TITLE	MIN ANUAL SALARY	MAX ANUAL SALARY
BATON ROUGE	Treatment Plant operator trainee	\$24,068	\$40,925
BATON ROUGE	Treatment Plant Operator I	\$30,681	\$52,231
BATON ROUGE	Treatment Plant Operator II	\$33,825	\$57,585
METROPOLITAN GOVT of NASHVILLE & DAVIDSON COUNTY	Water Quality Analyst I	\$40,948.08	\$53,232.18
METROPOLITAN GOVT of NASHVILLE & DAVIDSON COUNTY	Water Quality Analyst II	\$49,324.16	\$64,118.90
METROPOLITAN GOVT of NASHVILLE & DAVIDSON COUNTY	Water Quality Analyst III	\$59,676.29	\$77,581.81
ATLANTA	Water Plant Operator Class I	\$41,000	\$60,000
ATLANTA	Water Plant Operator Class II	\$38,300	\$47,900
	Water Plant Operator Class III	\$31,400	\$39,300
	MIN	MAX	
LEVEL I	\$32,138.69	44,485.73	
LEVEL II	\$39,435.05	54,749.97	
LEVEL III	\$44,833.76	65,055.60	

CITY OF JACKSON PAY PLAN

JOB TITLE	OCC CODE	RANGE	FIGA	STEP 1	STEP 15	STEP 2	STEP 25	STEP 3	STEP 35	STEP 4	STEP 45	STEP 5
VOLUNTEER COORDINATOR	0401-0-01	16	E	ANNUAL	\$25,930.08	\$26,525.28	\$27,134.16	\$27,759.12	\$28,399.20	\$29,055.12	\$29,728.08	\$30,417.12
				BI-WEEKLY	\$987.31	\$1,020.20	\$1,043.62	\$1,067.66	\$1,092.28	\$1,117.50	\$1,143.39	\$1,169.89
WAN TECHNICIAN	6549-0-01	16	NE	ANNUAL	\$25,930.08	\$26,525.28	\$27,134.16	\$27,759.12	\$28,399.20	\$29,055.12	\$29,728.08	\$30,417.12
				BI-WEEKLY	\$987.31	\$1,020.20	\$1,043.62	\$1,067.66	\$1,092.28	\$1,117.50	\$1,143.39	\$1,169.89
WATER MAINTENANCE & DISTRIBUTION SUPERVISOR	0355-0-01	19	E	ANNUAL	\$29,678.12	\$30,367.20	\$31,072.08	\$31,795.20	\$32,536.08	\$33,296.16	\$34,075.20	\$34,873.20
				BI-WEEKLY	\$1,141.50	\$1,167.97	\$1,195.08	\$1,222.89	\$1,251.39	\$1,280.62	\$1,310.58	\$1,341.28
WATER MAINTENANCE & DISTRIBUTION SUPT	0354-0-01	25	E	ANNUAL	\$39,041.28	\$39,963.12	\$40,908.24	\$41,877.12	\$42,870.24	\$43,888.08	\$44,931.12	\$46,001.28
				BI-WEEKLY	\$1,501.59	\$1,537.04	\$1,573.39	\$1,610.66	\$1,648.86	\$1,688.00	\$1,728.12	\$1,769.28
WATER METER REPAIRER	0357-0-01	12	NE	ANNUAL	\$21,714.24	\$22,203.12	\$22,704.24	\$23,218.08	\$23,745.12	\$24,285.12	\$24,838.08	
				BI-WEEKLY	\$835.16	\$853.97	\$873.24	\$893.00	\$913.27	\$934.04	\$955.31	\$977.12
WATER METER SERVICE SUPERVISOR	0358-0-01	19	E	ANNUAL	\$29,678.12	\$30,367.20	\$31,072.08	\$31,795.20	\$32,536.08	\$33,296.16	\$34,075.20	
				BI-WEEKLY	\$1,141.50	\$1,167.97	\$1,195.08	\$1,222.89	\$1,251.39	\$1,280.62	\$1,310.58	\$1,341.28
WATER PLANT MAINTENANCE SUPERVISOR	0359-0-01	22	E	ANNUAL	\$34,018.08	\$34,815.12	\$35,632.08	\$36,469.20	\$37,327.20	\$38,206.08	\$39,107.28	
				BI-WEEKLY	\$1,308.39	\$1,339.04	\$1,370.46	\$1,402.66	\$1,436.66	\$1,469.46	\$1,504.13	\$1,539.66
WATER PLANT OPERATIONS SUPERVISOR	0360-0-01	23	E	ANNUAL	\$35,611.20	\$36,448.08	\$37,305.12	\$38,184.24	\$39,085.20	\$40,008.24	\$40,954.08	
				BI-WEEKLY	\$1,369.66	\$1,401.85	\$1,434.61	\$1,468.62	\$1,503.28	\$1,538.78	\$1,575.16	\$1,612.47
WATER PLANT OPERATOR I	0361-0-01	16	NE	ANNUAL	\$25,830.08	\$26,525.28	\$27,134.16	\$27,759.12	\$28,399.20	\$29,055.12	\$29,728.08	
				BI-WEEKLY	\$997.31	\$1,020.20	\$1,043.62	\$1,067.66	\$1,092.28	\$1,117.50	\$1,143.39	\$1,169.89
WATER PLANT OPERATOR II	0362-0-01	17	NE	ANNUAL	\$27,119.28	\$27,743.28	\$28,383.12	\$29,039.28	\$29,711.28	\$30,400.08	\$31,108.16	
				BI-WEEKLY	\$1,043.05	\$1,067.05	\$1,091.66	\$1,116.90	\$1,142.74	\$1,169.23	\$1,196.39	\$1,224.24
WATER PLANT SUPERINTENDENT	0363-0-01	27	E	ANNUAL	\$42,822.24	\$43,839.12	\$44,881.20	\$45,949.20	\$47,044.08	\$48,166.08	\$49,316.16	
				BI-WEEKLY	\$1,647.01	\$1,688.12	\$1,726.20	\$1,767.26	\$1,809.39	\$1,852.54	\$1,896.78	\$1,942.13
WATER SERVICE REPRESENTATIVE	0364-0-01	12	NE	ANNUAL	\$21,714.24	\$22,203.12	\$22,704.24	\$23,218.08	\$23,745.12	\$24,285.12	\$24,838.08	
				BI-WEEKLY	\$835.16	\$853.97	\$873.24	\$893.00	\$913.27	\$934.04	\$955.31	\$977.12
WATER SYSTEMS MANAGER	0434-0-01	30	E	ANNUAL	\$49,233.12	\$50,410.08	\$51,617.28	\$52,854.24	\$54,122.16	\$55,421.28	\$56,753.28	
				BI-WEEKLY	\$1,893.58	\$1,936.65	\$1,985.28	\$2,032.06	\$2,081.62	\$2,131.59	\$2,182.82	\$2,236.31
WATER WELL OPERATOR	6414-0-01	18	NE	ANNUAL	\$28,368.24	\$29,023.20	\$29,695.20	\$30,384.24	\$31,090.08	\$31,814.16	\$32,556.24	
				BI-WEEKLY	\$1,091.09	\$1,116.28	\$1,142.12	\$1,168.62	\$1,195.77	\$1,223.62	\$1,252.16	