

# STARTEX-JACKSON-WELLFORD-DUNCAN WATER DISTRICT

## JOB DESCRIPTION

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**Job Title:** Water Plant Operator

**FLSA Status:** Non-Exempt

**Division/Section:** Operations/ Water Production

**Date Approved:** 2021

**Reports To:** Director of Water Resources

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## JOB SUMMARY

Under limited supervision, operates the high rate conventional and membrane surface water treatment facilities to meet all Safe Drinking Water Act criteria. Controls treatment plant processes and equipment to purify and clarify raw surface water for human consumption and industrial use. Operates the SCADA system as needed to monitor and control the treatment plant processes and the delivery of finished water through the SJWD Water District's distribution system.

Decision making is dictated by SJWD district policy, EPA, and SCDHEC regulations. Supervision is available as needed in person or by electronic communication.

**ESSENTIAL DUTIES AND RESPONSIBILITIES include the following. Other duties may be assigned.**

Performs the following duties necessary to operate the high rate conventional and membrane filter facilities for surface treatment facilities. This position must have all the knowledge and skills to operate a SCDHEC class 6 potable water treatment facility.

1. Assimilate information from daily logs and data collection paperwork and/or computer systems as needed to document and communicate operational status, ensure effective communication with shift relief, and provide information needed for further analysis and troubleshooting.
2. Starts and stops conventional plant and membrane plant as needed to maintain adequate supply of treated water.
3. Collects water samples from various sources and analyzes for pH, Cl<sub>2</sub>, alkalinity, hardness, turbidity, bacteria, iron, manganese and other process parameters in accordance with prescribed procedures. Calibrates the respective analytical meters using prescribed methods. Records data on bench sheet and in computer spreadsheet. Compares results with regulatory requirements and adjusts process to make sure all water quality criteria are met.

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4. Collects samples in accordance with prescribed procedures for shipment to certified labs for regulatory analyses. Accurately completes and files chain of custody forms.
  5. Monitors inventory of laboratory supplies and equipment and submits order requests as needed to supervisor so replacement supplies can be obtained in a timely manner.
  6. Performs required performance audit samples for all certified parameters to required specifications.
  7. Assists with keeping all lab certification criteria up to date.
  8. Performs jar tests, CCA analyses and other analytical tests to determine proper treatment processes. Applies results of these tools to correctly administer chemical doses to the water to be treated for proper clarification and disinfection. Assists Senior Plant Operator with tests and evaluations to determine more effective treatment schemes.
  9. Operates and monitors various machinery and equipment including chemical feeders, large water pumps and electric and manual valves.
  10. Monitors plant equipment, pumps, and instrumentation to assess operating conditions, detect malfunctions and initiate corrective actions through proper writing of work orders needed to address problem conditions and/or equipment operation.
  11. Transfers liquid chemicals from bulk storage tanks to day tanks by operating valves and electric pumps. Maintains awareness of hazards associated with any chemicals used in the treatment process or analytical procedures. Knows the proper procedures and uses proper personal protective equipment for each chemical.
  12. Monitors, calibrates and maintains chemical feed pumps to assure proper dose of chemicals. Records data in Hach WIMS. Inventories treatment chemical supplies daily and makes supervisor aware of critical levels per prescribed instructions.
  13. Operates and backwashes dual media filters in accordance with prescribed methods. Records pertinent data in computer spreadsheet.
  14. Observes the normal air/water backwash cycle for the membrane filters. Knows and executes procedures to correct any malfunctions to the automated sequences.
  15. Observes the integrity testing procedure for the membrane filter modules. Knows how to check for malfunctions.
  16. Initiates and observes the prescribed chemical cleaning process (CIP) of the membrane filter system.
  17. Monitors flow of wastewater to residual handling facilities, making adjustments as necessary to keep within prescribe limits. Monitors outflow of residuals lagoon for flow and DMR related parameters.
  18. Monitors level of water in pipes, basins, filters, and tanks. Adjusts level using prescribed procedures.
  19. Monitors electrical panels and usage.

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20. Makes sure the auxiliary power generators works properly in the case of a power failure or when needed to meet power demands. Operates the diesel generators according to generator SOP. Monitors fuel level and request replacement fuel as needed.
  21. Monitors power consumption and selects the most economically efficient equipment to remain below the demand target. Tracks energy cost to help staff determine most economical operation.
  22. Recognizes, communicates and properly documents recurring processes and/or equipment problems as well as participating in the generation of possible solutions to such problems.
  23. Enter and maintain critical component, maintenance and work order data in the JOB PLUS system and perform User level tasks in JOB PLUS to ensure proper utilization of and benefit from this system. Update comments in JOB when any action has taken place.
  24. Inspects and verifies calibrations of water quality monitoring panels. (turbidimeters, Cl<sub>2</sub>, pH, temperature, and conductivity meters).
  25. Answers telephone from customers, duty personnel and other outside agencies. Responds to requests in a timely manner.
  26. Makes periodic rounds throughout the plant using a check list (paper or electronic) to make sure all processes are within preset limits. Manually enters required data into the WIMS spreadsheet.
  27. Monitors security of facilities through use of cameras, SCADA and by prescribing to facility security procedures.
  28. Assists maintenance staff with maintenance on all equipment. Becomes familiar with troubleshooting procedures by using SOP's, equipment manuals and hands on training.
  29. Uses SCADA system to monitor plant processes and distribution system. Makes adjustments as necessary per prescribed procedures. Able to troubleshoot SCADA communications problems using help from drawings, supervisor(s) and SCADA maintenance technicians.
  30. Communicates with operations on-call and other personnel to initiate corrective actions in the distribution system when needed.
  31. Keeps abreast of updated regulations such as SCDHEC, plant SOP's, water treatment plant equipment manuals and OSHA standards to keep plant in compliance.
  32. Obtains necessary continuing education units to maintain license.
  33. Performs housekeeping duties throughout plant and associated facilities as needed or assigned.
  34. Assist with unloading chemicals from bulk shipments. Reviews paperwork, collects and analyzes samples of the delivered chemical to assure compliance with specifications.
  35. Provides instruction and leadership to trainees as assigned. Offers training, advice and assistance as needed.

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36. Consults with and appraises management team on any unusual water quality issues or security breaches.
  37. Performs any other duties assigned or as needed to keep system operating properly.

### **SUPERVISORY RESPONSIBILITIES**

Assists Senior Plant Operator with training, scheduling and providing input for performance audits. Instructs shift associates in proper job performance and makes sure tasks are performed according to prescribed requirements.

### **BUSINESS CONTACTS**

Operations personnel, SJWD management, customers, other utilities, public officials, SCDHEC, EPA, OSHA officials and vendors.

Conducts tours of plant for organized groups.

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## **KNOWLEDGE, SKILLS & ABILITIES**

HS Diploma or equivalent.

At least four years of knowledge of water plant and distribution system operations

User level knowledge of Hach Wims, Jop-Plus and SCADA systems

Proficiency in using E-mail and time card systems

Working knowledge of Excel and WORD applications, entering data, finding and saving files, working with spreadsheets and data bases, etc.

Ability to research water related topics in manuals, publications and on-line.

## **CERTIFICATIONS, LICENSES, REGISTRATIONS REQUIRED**

Minimum of "A" Water Plant Operator license.

First aid/CPR certified

## **EQUIPMENT, MACHINES & MATERIALS**

Computers, Standard office equipment, hand tools, laboratory equipment

Materials: Chemicals and reagents.

Operates, computer, printer, telephone, two-way radio, calculator, plant equipment and machinery: including generators, valves, pumps, pallet jack, fork truck, pressure washer, leaf blower, hydraulic equipment, overhead crane, pneumatic equipment, laboratory instruments, mechanic's tools, electrician's tools, plumbing tools, various hand and power tools

## **WORKING CONDITIONS**

(See attachment)

Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Must be able to work 24/7 shift schedule alone, nights, weekends, holidays.

## **ADDITIONAL COMMENTS**

The ability to speak and write fluently in English is important in order to deal with customers and communicate essential information.

## Working Environment

Job Title: Water Plant Operator

Date: 8-17-2021

Department: Water Production

Reviewed By: Tommy Staton

### WORKING CONDITIONS

<input checked="" type="checkbox"/> Cramped Quarters	<input checked="" type="checkbox"/> Inside / Outside	<input checked="" type="checkbox"/> Wet
<input checked="" type="checkbox"/> Stand on Concrete	<input checked="" type="checkbox"/> Fumes or Odors	<input checked="" type="checkbox"/> Dust
<input checked="" type="checkbox"/> Hot / Cold Temperatures	<input checked="" type="checkbox"/> Vibration	<input checked="" type="checkbox"/> Noise
<input checked="" type="checkbox"/> Work with others / alone	<input checked="" type="checkbox"/> Walk on Uneven Surfaces	<input checked="" type="checkbox"/> Other: _____

### PHYSICAL DEMANDS (essential to the job)

#### A. Dexterity Requirements

Eye / Hand Coordination	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Hand tools, computer work
Feet (foot pedals)	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Gator, fork truck
Fingering (picking, pinching, serving)	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Keyboarding, chemical packets, syringes
Handling (holding, grasping)	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Lab work, hand tools
Wrist Motion (repetitive flexation / rotation)	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Use of hand tools, computer work
Climbing	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Ladders & stairs
Balancing	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Working around basins

## B. Strength

Standing	30%	% of time	Lab work, Chemical transfer & unloading
Walking	30%	% of time	Making rounds, maintenance activities, etc.
Sitting	40%	% of time	SCADA monitoring, computer work
Lifting	50	pounds	Chemical bags
Pushing	220	pounds	Tools, equipment & supplies, pallets of chemical drums
Pulling	220	pounds	Tools, equipment & supplies, pallets of chemical drums

## C. Other

Speaking	X	Yes		No	Oral communication via radio, phone, face-to-face
Hearing	X	Yes		No	Monitoring of equipment sounds, alarms
Seeing	X	Yes		No	Computer screen, visual observation of equipment and processes
Depth Perception		Yes	X	No	
Color Vision	X	Yes		No	Reading of colored drawings, Process color coding, SCADA screens, Must be able to detect color changes in water with chemical reagents added.

## Other Comments:

The worker will be required to wear all necessary safety personal protection equipment when appropriate.

Worker must wear approved life preserver when around bodies of water.