



**CITY OF SANTA CRUZ
WATER TREATMENT OPERATOR-IN-TRAINING/II/III/IV**

Reports to Supervises Bargaining Unit	Water Treatment Supervisor IV/V-Chief Plant Operator Non-supervisory Service
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BASIC FUNCTION

Under general supervision, the Water Treatment Operator classifications perform a variety of skilled tasks in the operation, inspection, and maintenance of the City's freshwater treatment plant and related facilities.

DISTINGUISHING CHARACTERISTICS

The Water Treatment Operator series is alternately staffed with Operator-in-Training (OIT), II, III, or IV. Both the OIT and II classifications are required to obtain the next higher level treatment operator certification within eighteen months of date of hire. Once promoted to either the III or the IV level, the Water Department does not require further certification from the California Department of Public Health (CDPH); an incumbent who would like to advance to the IV classification may pursue further certification at his or her own discretion.

The Water Treatment Operator-in-Training classification is the entry and training level class of the Water Treatment Operator series. Under direct supervision and in a training capacity, incumbents are assigned routine tasks within the Production Division on an assigned shift while learning normal operating procedures. Incumbents are required to obtain a CDPH T2 certification within eighteen months of date of hire. Successful completion of these tasks will allow the incumbent to be promoted to the Water Treatment Operator II position; an incumbent who is not able to advance by obtaining the T2 certification will be dismissed.

The Water Treatment Operator II is the intermediate training level class of the Water Treatment Operator series, preparing incumbents for the first journey-level class of Water Treatment Operator III. Incumbents in this class perform routine plant operation on an assigned shift with immediate supervision. With increased competency, the incumbent may work with indirect supervision as approved by CDPH; however they are not stand alone shift operators. Incumbents in the II position follow standard operating procedures. Supervisory personnel or a Water Treatment Operator III are available to handle problems or emergencies. Incumbents are required to obtain the CDPH T3 certification within eighteen months of date of hire or of promotion. Successful completion of these tasks will allow the incumbent to be promoted to the Water Treatment Operator III position; an incumbent who is not able to advance by obtaining the T3 certification will be dismissed.

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The Water Treatment Operator III is the first journey-level position in the Plant Operator series and operates the plant as a shift operator defined by the CDPH and adheres to all state and federal regulations. Incumbents perform the more complex duties involved in plant and distribution system operation and maintenance on an assigned shift and may provide some lead direction to Water Treatment Operators OIT and II and personnel standing duty. An incumbent who obtains a T4 certification at his or her own discretion will be promoted to the Water Treatment Operator IV classification.

The Water Treatment Operator IV is the full journey-level position in the Water Treatment Operator series and, like the III, operates the treatment plant and distribution system as a shift operator. Incumbents perform the most complex duties involved in plant operation and maintenance and provide lead direction to Water Treatment Operators OIT and II and personnel standing duty. This classification is distinguished from the next higher classification of Water Treatment Supervisor IV/V-Chief Plant Operator in that the latter is the supervisory classification responsible for planning, directing, and evaluating the 24-hour, seven-day operation of treatment and storage facilities operated by the Water Department.

TYPICAL DUTIES *(May include, but are not limited to, those duties listed below.)*

The duties below are representative of what is expected from the Water Treatment Operator series. Some duties are performed at all levels of the series, with the more complex tasks, non standard assignments and emergencies, lead duties, and stand-alone shift operator responsibilities performed by the III and IV classes.

- Monitors, reads, and calculates the flow of water through the plant by meters, gauges, and visual inspection; operates pumps and valves to regulate flow and adjust chemical feeding according to established standards. This includes the operation of the Graham Hill Water Treatment Plant, the Beltz Treatment Plant, the Loch Lomond Water Treatment System, and other facilities as assigned.
- Collects samples and makes routine chemical and physical tests monitoring for changing conditions and chemical feed requirements.
- Logs test results, meter and feed readings, flow rates, maintenance and other data; prepares daily and periodic reports on plant operations.
- Inspects pumps, motors, chemical feeders, level controls and other equipment to ensure proper operations; performs general preventative maintenance on plant equipment such as greasing, changing oil and replacing parts; makes adjustments and emergency repairs on plant equipment as needed; works closely with maintenance and technical personnel to correct equipment problems. May perform some of the above duties using a computerized plant monitoring and operation system (SCADA).
- Performs routine plant cleaning and maintenance such as backwashing filters; cleaning lines; hosing filters and basins; disposing of sludge; cleaning sludge tanks; painting structures, equipment and piping; performing routine carpentry and electrical work; and maintaining plant grounds and facilities.
- Performs jar, filterability, and other routine laboratory tests to determine water quality and to optimize plant performance.

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- Loads, unloads and stores materials and supplies; assists in the storage and transfer of chlorine and other hazardous materials.
- May answer phone calls from customers regarding service problems and questions; may serve as central communications, taking and relaying information to and from department personnel on emergency needs and services; may direct field personnel during emergency operations in the absence of a supervisor.
- May apply treatment chemicals to raw and unfinished water.
- Participate in activities intended to optimize and maintain the quality of raw water sources; activities could include applying chemical and physical control methods to control nuisance algae and/or invasive species, or treatment process modifications and improvements.
- Participates in skills and safety training programs; learns and implements safety rules, regulations and emergency procedures.
- May conduct tours of treatment facilities.
- May be called on during off-hours to assist with emergencies related to system operations.
- Performs other related duties as assigned.

Water Treatment Operator III/IV

- May provide lead for assigned staff on shifts.

Water Treatment Operator IV¹

- Will be assigned to special projects, such as serving as liaison with Water Department engineers and other division employees, contractors, inspectors, etc.
- Will provide functional leadership by focusing on a specialty area or rotating across specialty areas, such as Training, Chemical Inventory, or Instrument Calibration.

MINIMUM QUALIFICATIONS

Knowledge:

Water Treatment Operator OIT/II/III/IV

- Basic mathematical principles, including fractions, decimals, proportions, measurements, and simple algebraic formulas
- Proper identification and use of common hand and power tools
- Common safety procedures for physical labor and handling of hazardous chemicals

Water Treatment Operator II/III/IV

- Basic mechanical, electrical, and hydraulic principles.
- Current principles, practices, and regulations related to the treatment process of the assigned water treatment plant including standard quality tests.
- Operation and maintenance of pumps, motors, valves, metering control systems and chemical feed equipment.
- Instrumentation and basic lab equipment, like turbidimeters, chlorine residual analyzers,

¹ Incumbents are eligible to work out of classification when assuming a significant number of duties of a higher level classification, according to provisions in the current Memorandum of Understanding.

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pH meters, jar test units, thermometers, and titration equipment, used in routine plant maintenance.

- Safety procedures pertaining to water plant operations, including the techniques for handling and storing hazardous chemicals.
- Chemistry and mathematics as used in the operations of the plant.

Skills:

Water Treatment Operator II/III/IV

- Operate, maintain, and adjust treatment system equipment.
- Read, interpret, and record data accurately.

Abilities:

Water Treatment Operator OIT/II/III/IV

- Understand and carry out oral and written directions given in English.
- Perform mathematical calculations accurately.
- Establish and maintain effective working relationships with others.
- Learn the principles, practices, techniques, and regulations pertaining to plant operations.

Water Treatment Operator II/III/IV

- Accurately read, interpret, and record technical data from meters and gauges.
- Operate, calibrate, and maintain instrumentation, like turbidity meters, residual analyzers, etc.
- Recognize unusual or dangerous operating conditions and make sound judgments within established guidelines.
- Drive a forklift after taking appropriate training course.

Water Treatment Operator III/IV

- Learn more complex principles, practices, techniques, and regulations pertaining to plant operation.

OTHER REQUIREMENTS

- Willingness to work rotating shifts including nights, weekends, holidays and overtime as assigned.
- Must be clean shaven at all times as required to wear respiratory protection equipment.
- Perform manual labor involving the frequent bending, pulling, pushing, lifting, and carrying of weights up to 100 lbs.
- Perform duties assigned while wearing respiratory protection equipment.
- May be called on during off-hours to assist with emergencies related to plant operations.
- Successful completion of training as a forklift operator within one year of appointment.

EDUCATION AND EXPERIENCE

The following education and experiences are required for each of the following positions:

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- High school degree or G.E.D.
- Some experience with hand and power tools

Water Treatment Operator II

- High school degree or G.E.D.
- One 3-unit (or one 36-hour) course of specialized training as designated by CDPH covering the fundamentals of drinking water treatment

Water Treatment Operator III

- High school degree or G.E.D.
- Two 3-unit (or two 36-hour) courses of specialized training as designated by CDPH that includes the fundamentals of drinking water treatment
and one of the following
- 1 year of operator experience in a Water Treatment Plant working as a certified T2 operator for a T2 facility or higher, *or*
- B.S. or M.S. in a related subject and completion of a comprehensive operator training program, pursuant to Section 63800 (h),
and one of the following
- 1 additional year of operator experience working as a certified treatment operator, or any of the following substitutions may be used for this required operator experience
 - A.A. or Certificate in water or wastewater technology that includes at least 15 units of physical, chemical, or biological science, *or*
 - B.A. in biology, chemical engineering, chemistry, civil engineering, environmental engineering, microbiology, public health, and sanitary engineering, *or*
 - M.A. in biology, chemical engineering, chemistry, civil engineering, environmental engineering, microbiology, public health, and sanitary engineering, *or*
 - Experience gained as a certified operator while working with lead responsibility for water quality related projects or research may be substituted, on a day-for-day basis, *or*
 - Experience gained as a certified wastewater treatment operator (not OIT) may be substituted on a two-for-one basis (i.e. 2 months in wastewater=1 month in drinking water).

Water Treatment Operator IV

- High school degree or G.E.D.
- Three 3-unit (or three 36-hour) courses of specialized training as designated by CDPH that includes at least 2 courses in drinking water treatment,
and one of the following:
- 1 year of operator experience in working as a shift or chief operator, while holding a valid T3 operator certificate, at a T3 facility or higher, *or*

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- B.S. or M.S. in a related subject and completion of a comprehensive operator training program, pursuant to Section 63800 (h),
and one of the following:
- 3 additional years of operator experience working as a certified treatment operator, or any of the following substitutions may be used for this required operator experience
 - A.A. or Certificate in water or wastewater technology that includes at least 15 units of physical, chemical, or biological science, *or*
 - B.A. in biology, chemical engineering, chemistry, civil engineering, environmental engineering, microbiology, public health, or sanitary engineering, *or*
 - M.A. in biology, chemical engineering, chemistry, civil engineering, environmental engineering, microbiology, public health, or sanitary engineering, *or*
 - Experience gained as a certified wastewater treatment operator (not OIT) may be substituted on a two-for-one basis (i.e. 2 months in wastewater=1 month in drinking water).

LICENSES/CERTIFICATES

- Possession at time of hire and continued maintenance of a valid California Class C driver's license and a safe driving record.
- Must possess at time of appointment and continue to maintain a Water Plant Operator's Certificate from the CDPH for each of the following positions:
 - Water Treatment Operator II: Grade II (T2)
 - Water Treatment Operator III: Grade III (T3)
 - Water Treatment Operator IV: Grade IV (T4)

DESIRABLE QUALIFICATIONS

- Ability to use computerized monitoring and operation system.

Classification No.: 239/240/241/242
Date of Issue: 11/09
Supersedes: 09/09

Career Path

Water Treatment Supervisor V-Chief Plant Operator
Water Treatment Supervisor IV
Water Treatment Operator IV
Water Treatment Operator III
Water Treatment Operator II
Water Treatment Operator-in-Training