



Code: 5532

Family: Technical Engineering
Service: Operation and Construction
Group: Engineering, Design, and Structural
Series: Chemical Engineering

CLASS TITLE: WATER CHEMIST II

CHARACTERISTICS OF THE CLASS

Under immediate supervision, performs entry-level professional chemical and physical analyses of raw and treated water to assess water quality and to assist in the control of processes which make water suitable for drinking, and performs related duties as required

ESSENTIAL DUTIES

- Prepares and standardizes chemical solutions prior to analyzing water samples
- Performs standard analytical tests on water samples obtained from source water, purification plants, and distribution systems to detect and determine relevant characteristics (e.g., pH level, chlorine residue, turbidity, ammonia, threshold odors, radioactivity, fluoride concentration)
- Performs standard tests on pipe scales, sediment, seepage, and sludge deposits to determine chemical content
- Analyzes materials used in treating water at filtration plants (e.g., blended phosphate, aluminum sulfate, hydrofluosilicic acid) to ensure conformance with product specifications and safety standards
- Calculates, analyzes, and interprets test results
- Prepares reports on the status and results of testing projects
- Records data and maintains records on tests and analyses conducted in accordance with state and federal guidelines
- Assists in conducting specialized water analyses in response to customer complaints, as required
- Assists in conducting research to discover improved methods of water purification, as required
- Assists in determining the amounts of chemicals to be used at purification plants, as required
- Maintains laboratory equipment, materials, and instrumentation in conformance with acceptable laboratory standards, as required

NOTE: *The list of essential duties is not intended to be inclusive; there may be other duties that are essential to particular positions within the class.*

MINIMUM QUALIFICATIONS

Education, Training, and Experience

- Graduation from an accredited college or university with a Bachelor's degree in Chemistry, Chemical Engineering, or a directly related field; or an equivalent combination of education, training and experience provided that the minimum degree requirement is met

Licensure, Certification, or Other Qualifications

- None

WORKING CONDITIONS

- Exposure to fumes or dust
- Exposure to hazardous and toxic chemicals

EQUIPMENT

- Standard office equipment (e.g., telephone, printer, photocopier, fax machine, calculator)
- Computers and peripheral equipment (e.g., personal computer, computer terminals, hand-held computer)
- Personal protective equipment (e.g., glasses, gloves)
- Scientific calculators
- Chemical and environmental testing and monitoring equipment
- Laboratory instruments and materials

PHYSICAL REQUIREMENTS

- Some moving or lifting of laboratory equipment and supplies

KNOWLEDGE, SKILLS, ABILITIES, AND OTHER WORK REQUIREMENTS

Knowledge

Some knowledge of:

- applicable chemical water treatment and purification principles, theories, methods, and practices
- *laboratory methods, practices, and procedures
- *chemical testing and analysis principles, theories, methods, and practices
- applicable safety principles, methods, practices, and procedures
- applicable federal, state, local laws, regulations and guidelines
- procedures and methods for maintaining applicable equipment and instruments
- applicable computer software packages and applications

Knowledge of applicable City and department policies, procedures, rules, and regulations

Skills

- *ACTIVE LEARNING - Understand the implications of new information for both current and future problem-solving and decision-making
- *ACTIVE LISTENING - Give full attention to what other people are saying, take time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times
- *MATHEMATICS - Use mathematics to solve problems
- *SCIENCE - Use scientific rules and methods to solve problems
- EQUIPMENT MAINTENANCE - Perform routine maintenance on equipment and determine when and what kind of maintenance is needed
- EQUIPMENT SELECTION - Determine the kind of tools and equipment needed to do a job
- QUALITY CONTROL ANALYSIS - Conduct tests and inspections of products, services, or processes to evaluate quality or performance

Abilities

- COMPREHEND ORAL INFORMATION - Listen to and understand information and ideas presented through spoken words and sentences

- SPEAK - Communicate information and ideas in speaking so others will understand
 - COMPREHEND WRITTEN INFORMATION - Read and understand information and ideas presented in writing
 - WRITE - Communicate information and ideas in writing so others will understand
 - RECOGNIZE PROBLEMS - Tell when something is wrong or is likely to go wrong
 - REASON TO SOLVE PROBLEMS - Apply general rules to specific problems to produce answers that make sense
 - REASON MATHEMATICALLY - Choose the right mathematical methods or formulas to solve a problem
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All employees of the City of Chicago must demonstrate commitment to and compliance with applicable state and federal laws, and City ordinances and rules; the City's Ethics standards; and other City policies and procedures.

The City of Chicago will consider equivalent foreign degrees, accreditations, and credentials in evaluating qualifications.

* May be required at entry.

City of Chicago
Department of Human Resources
July, 2014