



Chemist I/II

DEFINITION

Under general supervision (Chemist I) or direction (Chemist II) from the Laboratory Services Supervisor, performs a variety of water quality analyses; sets up, calibrates, operates, and performs minor maintenance and repair of simple and/or sophisticated laboratory instruments; assists in collecting field samples for subsequent laboratory testing; fields customer calls relating to water quality; coordinates special applied research projects as assigned; and performs related work as required. The Chemist II may provide work direction and training to technicians and less experienced chemists.

DISTINGUISHING CHARACTERISTICS

Chemist I is the entry-level class in the professional Chemist series. Under general supervision within a framework of established policies and procedures, incumbents learn and perform a variety of routine and specialized laboratory tests and analyses. As experience and proficiency are gained, assignments become more varied and complex. Assignments are given in specific terms and are subject to frequent review by the Laboratory Services Supervisor while in progress and upon completion, except where tasks are well-defined by established standards, policies, and procedures. There is limited latitude for independent judgment and action in well-defined areas of work.

This classification is distinguished from the experienced, journey-level Chemist II class by the routine nature and limited complexity of work assignments and the level of supervision received. The Chemist I and II classifications are flexibly staffed. Upon recommendation of the immediate supervisor and approval by the department manager, incumbents in this class may advance to the Chemist II classification after a minimum of two (2) years at the first level and with demonstrated proficiency to meet the job requirements of the Chemist II classification.

Chemist II is the experienced, journey-level class in the professional Chemist series. Under direction, within a framework of established policies and procedures, incumbents perform the full range of more difficult and complex laboratory tests and analyses and may provide some work direction and training to technicians and less experienced chemists while exercising discretion and independent judgment within established guidelines. There is significant latitude for independent judgment and action in well-defined areas of work.

This classification is distinguished from the entry-level Chemist I class by the complexity of work assignments, the level of independence with which assignments are performed, and the level of supervision received. The Chemist II is distinguished from the advanced journey-level Senior Chemist class, which has direct responsibility for planning, assigning, and scheduling the work of laboratory technicians and auditing compliance to quality system procedures.

TYPICAL DUTIES

TYPICAL EXAMPLES OF DUTIES MAY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

- Performs analyses of water samples for the purpose of monitoring the treatment, quality, and distribution of potable water.

- Sets up, calibrates, operates, and performs minor maintenance and repair of various laboratory instruments, including, but not limited to, gas chromatograph/mass spectrometer, total organic carbon analyzer, ion chromatograph, and inductively coupled plasma/mass spectrometer; takes necessary steps to optimize instrument performance.
- Applies basic statistical tools to verify accuracy and precision of analytical results and identify possible bias or trends.
- Reviews and authorizes analytical data generated by laboratory staff by verifying batch quality control parameters are acceptable, necessary documentation is complete and correct, results are reasonable, and samples are representative.
- Responds to queries and complaints from the public regarding water chemistry, microbial content, taste, and odor; partners with District engineers to determine if operational factors may be impacting water quality, researches issue, and provides explanations to customer. may collect and analyze samples from the site of the complaint to verify and/or identify the problem.
- Assists in developing new analytical methods, refining existing methods and procedures, and creating or updating associated forms and documents.
- May design, complete, and summarize water quality research projects.
- Interacts with clients to provide project management support, including but not limited to arranging for analysis and sampling, arranging for data acquisition and reporting, and assuring the successful completion of District analytical projects.
- Administers the District Laboratory Information Management System (LIMS), including designing tables, creating reports, developing parsing scripts, and creating customizations to increase lab efficiency; performs upgrades to LIMS system; creates functions in LIMS to increase efficiency of lab staff operations.
- Maintains the workspace in a clean and organized manner; ensures an adequate inventory of needed supplies and chemicals; maintains required records; performs and documents completion of required maintenance..
- Purchases or submits requisitions for chemical, supplies, and equipment..
- May instruct technicians in work procedures and sampling techniques and provide direction, training, and technical guidance to technicians and less experienced chemists.
- Safely operates a motor vehicle when driving routes for sample collection, traveling between District facilities and on District business.
- Uses appropriate personal protective equipment and follows safe laboratory practices.
- Performs other related work as required.

REQUIREMENTS

Any combination of education and experience that would likely provide the required knowledge, skills, and abilities is qualifying. A typical way to obtain the knowledge, skills, and abilities would be the equivalent of:

Education and Experience:

Possession of a baccalaureate degree from an accredited college or university with a major in chemistry or a related field; and

Chemist I: No work experience required.

Chemist II: Two (2) years of full-time experience as a professional chemist, which includes at least one year in water or wastewater analysis.

Substitution: A graduate degree in chemistry or a related field may be substituted for one year of general experience referenced above.

Knowledge, Skills, and Abilities:

Knowledge of: Quantitative and qualitative analysis methods and techniques; standard laboratory equipment and its care and use; good analytical laboratory practices and aseptic techniques; basic physical, chemical, and microbial characteristics of raw and treated water and the fundamentals of water treatment; proper water sampling techniques; state and federal laws and regulations relating to water quality; laboratory quality assurance and quality control practices; basic statistical analysis calculations; the safe use of hazardous chemicals and electronic instruments; research methods; modern office practices, methods, and computer equipment and applications related to the work, including word processing, database, and spreadsheet software..

Skill and Ability to: set up, operate, and perform minor maintenance on a variety of laboratory equipment; perform and interpret the results of standard tests of water; perform accurate calculations; analyze complex technical water quality problems and arrive at reasonable conclusions; explain technical issues to non-technical persons; plan test procedures, set priorities, and organize work; prepare clear and concise written reports; operate modern office equipment including computer equipment and specialized software applications programs; communicate clearly and concisely, both orally and in writing; establish, maintain, and foster positive and effective working relationships with those contacted in the course of work..

Additional Requirements:

- Must possess a valid California driver's license and have a satisfactory driving record.

Working Conditions/Physical Requirements:

The essential duties of the job are primarily performed in a laboratory environment with periodic exposure to chemicals, solvents and other environmental substances, and require the ability to sit for extended periods of time in front of a computer and laboratory equipment; to intermittently twist to reach instruments or supplies surrounding equipment; to use hand strength and finger dexterity to perform simple grasping and fine manipulation; to hear and talk to receive and communicate information; to occasionally operate a vehicle; to traverse uneven terrain; to stand

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for long periods of time; to walk, bend, and squat; and to perform work activities with hands in and out of water.

The essential functions of these classifications require driving due to the need for frequent travel to water treatment plants, pump stations, reservoirs, field sites, meetings, and/or other agency facilities; transportation of time-sensitive/confidential materials, equipment, or water samples; and/or the ability to respond to emergencies, and service disruptions. Alternative transportation is not suitable due to security concerns, logistical challenges, and critical response time requirements.

Revised: 03/2025

Approved: 
Human Resources/Risk Manager