



**APPROVED BY: THE CHIEF
OPERATING OFFICER**

EFFECTIVE: May 2019

**MICROBIOLOGIST I
MICROBIOLOGIST II
MICROBIOLOGIST III**

Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed within the job.

DEFINITION

To perform a variety of biological, microbiological, biochemical, physical, and other tests and analyses of source and treated water, recycled, groundwater, and other samples used in the treatment process, and distribution of potable water; to operate, calibrate, and make minor repairs on laboratory equipment; and to perform a variety of duties relative to the assigned area of responsibility.

DISTINGUISHING CHARACTERISTICS

Microbiologist I

This is the entry level class in the series. This class is distinguished from the Microbiologist II by the performance of the more routine tasks and duties assigned to positions within the series. Since this class is typically used as a training class, employees may have only limited or no directly related work experience. Advancement to the Microbiologist II level is based on demonstrated proficiency in performing the assigned functions, and is at the discretion of higher level supervisory or management staff.

Microbiologist II

Microbiologist II is the experienced-level class in the series. It is distinguished by incumbents possessing some experience in performing microbiology work; however, incumbents do not possess the full breadth and depth of knowledge and ability of the Microbiologist III. Advancement to the next higher-level class is at the discretion of management, and is dependent on demonstrating the experience, knowledge, and ability requirements of the Microbiologist III.

Microbiologist III

This is the journey level class within the series. Employees within this class are distinguished from the Microbiologist II by the performance of the full range of duties as assigned. Employees at this level receive only occasional instruction or assistance as new or unusual situations arise, and are fully aware of the raw and finished water operating procedures and policies of the work unit. Positions in this class are flexibly staffed and are normally filled by advancement from the Microbiologist II level, or, when filled from the outside, have prior experience.

SUPERVISION RECEIVED AND EXERCISED

Microbiologist I

Receives immediate supervision. Employees within this class work in the presence of their supervisor or in a situation of close control and easy reference. Work assignments are given with explicit instructions or are so routine that few, if any, deviations from established practices are made without checking with the supervisor.

Microbiologist II

Receives general supervision. The assigned duties for employees within this class require the exercise of judgment or choice among possible actions, sometimes without clear precedents and with concern for the consequences of the action. Employees may or may not work in proximity to their supervisor.

Microbiologist III

Works under direction. Employees within this class receive general instructions regarding the scope of and approach to projects or assignments, but procedures and techniques are left to the discretion of the employees.

May exercise lead direction over assigned staff.

TYPICAL DUTIES

The duties specified below are representative of the nature and level of duties assigned to this class and are not intended to be an inclusive list. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to this position. Management reserves the right to add, modify, change, or rescind the work assignments of different positions.

1. Perform various bacteriological determinations that evaluate water quality for operational and compliance requirements. This includes the use of many prescribe EPA Methods and Standard Methods for the Examination of Water & Wastewater.

2. Conduct scheduled surveillance monitoring of reservoirs and source waters to detect changes in water quality due to biological activity, such as, algae and algal toxicity, bacteriological, invasive mussels and other constituents as needed.,, C.
3. Conduct standard and special laboratory tests to collect information for diagnosing and evaluating water quality problems; conduct other types of research as assigned.
4. Make special biological, limnological, and ecological investigations of reservoirs and distribution system and flood control facilities; to include water toxicity tests and invasive species determinations; analyze findings and prepare reports for presentation to management staff.
5. Calibrate, operate, and perform minor maintenance on electronic equipment such as fluorometers, pH meters, colorimeters, microscopes, and other instrumentation as needed.
6. Maintain a variety of documents, records, and files on research projects, investigations, and testing results; ensure all activities are documented in accordance with District, regulatory agency, or professional standards and requirements.
7. Provide written and verbal reports on assigned activities; conduct meetings and presentations as assigned.
8. Perform calculations and statistical analysis; enter and retrieve data from Laboratory Information Management System (LIMS).
9. Conduct tours of laboratory facilities.
10. Train assigned employees in their area of work including microbiological analyses and water quality methods, procedures, and techniques.
11. Employees have a responsibility for safety; for following safety regulations and safety policies and procedures applicable to their work.
12. Pursuant to California Government Code Section 3100, all public employees are required to serve as disaster service workers subject to such disaster service activities as may be assigned to them by their supervisors or by law.
13. Perform related duties and responsibilities as assigned.

QUALIFICATIONS

The level and scope of the knowledge, skills and abilities listed in this section are related to the job duties as defined under Distinguishing Characteristics.

Microbiologist I

Some Knowledge of:

- Principles and practices of microbiological measurement techniques for various microbiological determinations in water matrices.
- Principles and practices of laboratory quality assurance.
- Operation of analytical instrumentation and operating systems.
- Calibration, operation, and minor maintenance and repair of instrumentation.
- Common desktop applications and software.

Ability to:

- Perform a wide variety of professional analytical and technical duties involved in the analyses of source and treated water, recycled water, groundwater, and related material samples as needed.
- Conduct research and data analysis including literature review.
- Learn operational characteristics of laboratory instrumentation and equipment.
- Learn methods and techniques of water sampling, preservation, extraction and storage requirements.
- Learn methods and techniques used in laboratory quality assurance programs.
- Learn methods and techniques of handling and storing hazardous materials.
- Learn pertinent federal and state laws, codes and regulations such as California regulations for drinking water.
- Learn to enter data and navigate the Laboratory Information Management System.
- Learn to maintain and conduct minor maintenance on various laboratory equipment.
- Learn to adhere to District policies and procedures.
- Learn to perform a variety of duties in the analysis of drinking water, recycled water and groundwater samples.
- Learn to assist in applied research projects.
- Learn to perform and interpret water analysis test results.
- Learn to analyze problems, identify alternative solutions, project consequences of proposed actions, and implement recommendations in support of goals.

Training and Experience Guidelines

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

Training

Equivalent to a Bachelor's degree in microbiology, molecular biology, or related scientific field.

Experience

None

Substitution

Directly related experience may be substituted for the college requirement on the basis of one and one-half years experience for one year of education to a maximum of four years.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license.

Microbiologist II

In addition to the qualifications for Microbiologist I:

Some Knowledge of:

Operational characteristics of laboratory and electronic instruments and equipment.
Methods and techniques of water sampling, preservation, extraction, storage requirements and analysis of microorganisms.
Methods and techniques used in laboratory quality assurance programs.
Principles and practices of applied research projects.
Methods and techniques of handling and storing hazardous materials.
Pertinent federal and state laws, codes, and regulations such as California regulations for drinking water.

Working Knowledge of:

Principles and practices of microbiology measurement techniques for various water matrices.
Operation of analytical instrumentation and operating systems.
Calibration, operation, and minor maintenance and repair of instrumentation.
Drinking water regulations and monitoring requirements.
Interpretation of test results for water quality determinations.

Ability to:

Perform special biological, limnological, and ecological investigations of reservoirs, distribution systems and recycled water collect samples for specified projects.
Assist in the development of applied research projects; develop and review test equipment, products, methods and procedures; recommend operational and equipment modifications to ensure delivered water meets regulatory requirements.
Maintain and conduct minor maintenance on various laboratory equipment.
Adhere to District policies and procedures.

Develop, implement, and continuously optimize measurement techniques.
Enter data and navigate the Laboratory Information Management System
Perform a variety of duties in the analysis of drinking water, recycled water and groundwater samples.
Learn to perform and interpret water analysis test results.
Learn to identify and analyze existing and potential laboratory demands and management challenges.
Learn to administer budget, personnel, and administrative issues.
Learn to analyze problems, identify alternative solutions, project consequences of proposed actions and implement recommendations in support of goals.
Learn to conduct complex water quality studies and review, analyze, and interpret the results.
Prepare clear and concise reports.
Communicate clearly and concisely, both orally and in writing.

Training and Experience Guidelines

The following combination represents the minimum training and experience requirements for this classification:

Training

Equivalent to a Bachelor's degree in microbiology, molecular biology or related scientific field.

Experience

Three (3) years of experience in water or wastewater analysis.

Substitution

Directly related experience may be substituted for the college requirement on the basis of one and one-half years of experience for one year of education to a maximum of four years.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license.

Microbiologist III

In addition to the qualifications for Microbiologist II:

Working Knowledge of:

Principles, practices and responsibilities involved in leading the work of assigned staff.
Principles and practices of laboratory quality assurance.

Principles and practices of applied research projects.

Thorough Knowledge of:

Drinking water regulations and monitoring requirements.

Ability to:

Perform special biological, limnological, and ecological investigations of reservoirs, distribution systems, and recycled water collect samples for specified projects.

Assist in the development of various applied research projects.

Identify and analyze existing and potential laboratory demands and management challenges.

Administer budget, personnel, and administrative issues.

Analyze problems, identify alternative solutions, project consequences of proposed actions, and implement recommendations in support of goals.

Conduct complex water quality studies and review, analyze, and interpret the results,

Perform a variety of technical tasks relative to assigned areas of responsibility.

Perform a wide variety of professional analytical and technical duties involved in the analyses of water, wastewater, and related material samples for organic or inorganic constituents.

Training and Experience Guidelines

The following combination represents the minimum training and experience requirements for this classification:

Training

Equivalent to a Bachelor's degree from an accredited college or university with major course work in , microbiology, molecular biology or a related field.

Experience

Five (5) years in water or wastewater analysis.

Substitution

Directly related experience may be substituted for the college requirement on the basis of one and one-half years of experience for one year of education to a maximum of four years.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license.

WORKING CONDITIONS

Environmental Conditions

Office and laboratory environment; exposure to computer screens and copiers; moderate noise levels; and controlled temperature conditions hazardous chemicals and materials, heat sources, various gases under high pressure, flammable solvents and potentially carcinogenic materials.

Physical Conditions

Essential functions may require maintaining physical condition necessary for reaching, walking, standing or sitting for prolonged periods of time; extensive use of computer keyboard and mouse; light to moderate lifting; reaching above head; visual acuity for reading documents, correspondence and computer screens; operating a variety of manual and automated office equipment.

CLASS LEGEND

Established Date: 5/2018
Employee Groups: EA
Revisions Dates: 5/2019
FSLA Status: Non-exempt

	<u>Current</u>	<u>Previous</u>
Class Code:		
Series Code:	1LD	
Family Code:		
Previous Titles:		Microbiologist I/II
Analyst:	FD	