



CLASS SPECIFICATION

05-11-2017

UTILITY MICROBIOLOGIST, 7858

Summary of Duties: Performs microbiological analyses of drinking, source, ground, industrial, and recycled water in compliance with local, state, and federal public health standards and Safe Drinking Water Act (SDWA) regulations; performs tests to monitor water security; researches, develops, and implements new testing capability for the detection of current and emerging contaminants; prepares reports and makes recommendations of the impact of laboratory-generated data on public health; plans, coordinates, implements, and maintains the Laboratory Information Management System (LIMS) database and applications; coordinates contracts for laboratory supplies and services; supervises, reviews work and provides instructions to professional and/or technical laboratory employees, including other Utility Microbiologists; performs Quality Assurance (QA) tasks to validate the integrity and security of laboratory data; and other related duties.

Class Characteristics/Distinguishing Features: Utility Microbiologists perform microbiological analyses for the detection of pathogens in drinking, source, ground, industrial, and recycled water in compliance with the SDWA; perform water security-related and emergency response tests; maintain and upgrade LIMS; and submit electronic laboratory data to regulatory agencies.

The Utility Microbiologist differs from Water Microbiologist due to the former's focus on laboratory testing relative to potable water and the specific laboratory method utilized at the Department of Water and Power for this purpose. The Utility Microbiologist undergoes a lengthier period of training and special certification.

Entry-level positions are designated as temporary training positions under Civil Service Rule 5.30. As trainees, as entry-level Utility Microbiologists receive extensive on-the-job training to acquire the knowledge, skills, and abilities required to perform all journey-level duties. Trainees work under the direction of and assist journey-level or higher-level employees of the same or other professional classes. Employment as a trainee is comprised of a maximum of 36 months during which the trainee is expected to successfully complete on-the-job training and obtain the required certification. When employees in the Utility Microbiologist classification complete the requisite training and certification, the DWP can change their appointment from trainee to regular.

Employees at the entry level performs less complex microbiological analyses under close supervision while learning and assisting in a variety of routine duties. Employees at the journey-level perform work requiring a broad knowledge of microbiology skills, laboratory Electronic Data Transfer (EDT) reporting, and QA programs. Individuals at this level usually work independently; receiving instructions in general terms, and may be assigned to one or more major projects.

Some Utility Microbiologists may serve as a project lead in advanced work that is technically complex and requires considerable experience, skill, and knowledge for research activities. They may conduct extensive research into new technical developments and evaluate their suitability for the laboratory, train new employees about new procedures and techniques, or may provide technical support to solve complex issues. They may direct laboratory activities, and supervise other Utility Microbiologists and/or technical laboratory employees. They may act as program manager in work that requires considerable working knowledge, skills, and experience in areas such as: Microbiology, Chain of Custody, LIMS database application, QA programs, and various state and federal reporting requirements.

Example of Duties:

- Performs routine analyses and procedures in accordance with the laboratory approved Standard Operating Procedures (SOP) and makes recommendations based on results of analytical testing;
- May perform advanced methodologies as required by state and federal guidelines;
- Researches new analytical methodology and/or improves efficiency and sensitivity of existing laboratory and field methods;
- Develops new and updates existing laboratory SOPs, and ensures conformance of SOPs with state and federally approved reference methods;
- Prepares and maintains records of activities performed including laboratory data entry and validation;
- Assigns, reviews, directs, and participates in the activities of laboratory personnel engaged in the processing and testing of drinking, source, ground, and recycled water;
- Supervises, trains, assigns, and reviews the work of professional, technical, and support staff; and
- Serves as a project lead for work that is technically complex and requires considerable experience, skill, and knowledge;
- Assists the Quality Assurance Officer in the planning, implementation, review, and evaluation of the laboratory's Quality Assurance Program (QAP) and Chemical Hygiene Plan;
- Performs and validates daily QA activities for sample receiving and analyses and conducts internal audits;
- Coordinates Performance Testing studies and Environmental Laboratory Accreditation Program (ELAP) on-site assessment;
- Coordinates contract lab analyses activities, reviews contract laboratory data and invoices, and enters and validates contract lab data in LIMS database application;
- Ensures compliance of analytical results and data reporting to laboratory QA program and Ethics and Data Integrity policy;
- Prepares documents for Environmental Protection Agency (EPA) and ELAP such as new certification applications and data packages;
- Resolves method performance issues and troubleshoots instrument problems;
- Prepares, creates, and modifies Water Quality Lab worksheets and data extraction reports for internal and external clients;
- Reviews and submits compliance samples for approval by management;
- Prepares, formats, and submits analytical data for EDT from the LIMS to the State's Water Quality Monitoring (WQM) database, and submits reports to internal and external clients;

- Coordinates instrument data transfer interfaces, streamlines automatic data transfer processes, and provides technical support to resolve data transfer issues;
- Maintains and updates the LIMS database application and creates and assigns new LIMS users accounts and privileges, assists LIMS users with sample log-in and other related functions;
- Coordinates compliance and non-compliance data reporting activities;
- Collaborates with other internal and external agencies and organizations in developing and/or improving analytical methods and data management system;
- Maintains records of laboratory data and documents;
- Monitors inventory and procures laboratory supplies and prepares specifications for the procurement of laboratory instruments and equipment;
- Assists in managing laboratory contracts for supplies and services, prepares cost analysis reports for laboratory services;
- Supervises professional, technical, and support staff; and
- Provides support to various groups within LADWP and outside agencies and organizations.

Qualifications: Incumbents must have the following knowledge and abilities:

Knowledge of:

- Production Microbiological laboratory procedures and techniques applicable to the preservation, isolation, and identification of waterborne pathogens;
- Cultivation and maintenance of microbial cultures;
- Immunofluorescence or cell imaging techniques;
- Potable and non-potable contaminants and their implication to human health;
- Methods employed in drinking water microbiology laboratory;
- Drinking water treatment technology and water distribution system;
- Waterborne disease and their causative agents;
- Sample collection, transportation, storage, and sample integrity;
- Principles of Deoxyribonucleic Acid (DNA) and Ribonucleic Acid (RNA) detection techniques and applications;
- Local, State, and Federal drinking water regulations;
- LIMS applications and databases;
- State and Federal laboratory certification;
- Good Laboratory Practices and laboratory safety procedures; and
- Water security-related testing and emergency response.

Ability to:

- Identify methods for the detection of indicator microorganisms;
- Develop and implement methods for the detection of waterborne pathogens;
- Operate, maintain, and troubleshoot fluorescence, phase contrast, and light microscope;
- Read and interpret scientific documents;
- Write, review, update, and follow SOP;

- Operate, maintain, and troubleshoot all instruments used in Microbiology laboratory;
- Perform molecular techniques for the detection of target organisms;
- Maintain and update LIMS, databases, and applications;
- Generate, format, and submit compliance reports;
- Deal tactfully with other employees and the public;
- Develop and implement QA/Quality Control (QC) procedures and requirements;
- Apply department and laboratory safety rules and procedures; and
- Communicate effectively orally and in writing.

Minimum Requirements:

1. Graduation from an accredited four-year college or university with a degree in Microbiology or Molecular Biology; or
2. Graduation from an accredited four-year college or university with 24 semester or 36 quarter units in any combination of Microbiology, Bacteriology, Parasitology, Virology, Microbial Ecology, Microbial Physiology, Mycology, Molecular Biology, Biochemistry, Epidemiology, Public Health, or Statistics.

License: A valid California driver's license is required.

Physical Requirements: Strength to perform average lifting up to 25 pounds; good hearing ability; and good eyesight, including the ability to accurately and quickly recognize and distinguish colors within the visible light spectrum, and free from other visual impairments that would restrict the ability to perform duties.

Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable accommodation will be evaluated on an individual basis and will depend, in part, on the specific requirements for the job, the limitations related to the disability, and the ability of the hiring department to reasonably accommodate the limitations.

As provided in Civil Service Commission Rule 2.5 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory, and not restrictive. It is not intended to declare what all of the duties and responsibilities of any position shall be.