

City of San José
CLASS SPECIFICATION

Title: Microbiologist I/II (5115/5105)

DEPARTMENT	ACCOUNTABLE TO	FLSA STATUS
Environmental Services Department	Varies	Non-exempt

CLASS SUMMARY

Under general supervision (Microbiologist I) or direction (Microbiologist II), performs professional and technical work of moderate to complex difficulty involving the qualitative and quantitative biological, microbiological and chemical analyses of water, wastewater, industrial waste and related materials. Performs related work as required.

DISTINGUISHING CHARACTERISTICS

The Microbiologist I/II is a flexibly staffed professional entry/journey class in the Microbiologist series, described as follows:

Microbiologist I – This is the entry-level class in the professional Microbiologist classification series. This class is responsible for providing qualitative and quantitative laboratory determinations upon water, wastewater, industrial waste, and related materials. Positions at this level are not expected to function with the same amount of knowledge or skill level as positions allocated to the Microbiologist II level and usually exercise less independent discretion and judgment in matters related to work procedures and methods. Work is usually supervised while in progress and fits an established structure of pattern. Exceptions or changes in procedures are explained in detail as they arise. As experience is gained, assignments become more complex and are performed with greater independence.

Microbiologist II – This is the journey-level class in the professional Microbiologist classification series responsible for performing the full range of the more complicated and research related biological, microbiological, and chemical testing requirements. Positions at this level receive only occasional instruction or assistance as new or unusual situations arise and are fully aware of the operating procedures and policies of the work unit. Microbiologist II is distinguished from Microbiologist I in that they may provide training to a Microbiologist I. This class is distinguished from the Environmental Laboratory Supervisor in that the latter performs the most complex work assigned to the series, including serving as a supervisor over professional staff.

The Microbiologist I/II reports to the Environmental Laboratory Supervisor assigned to the San José/Santa Clara Regional Wastewater Facility Laboratory. Assignments may be made to any shift in an around-the-clock operation, and incumbents must be available for work on weekends and holidays or be on standby as needed.

QUALIFICATIONS

Minimum Qualifications

Education and Experience

Microbiologist I

Bachelor's degree in bacteriology, microbiology or related scientific discipline, and one (1) year of experience working in a laboratory environment.

Microbiologist II

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Bachelor's degree in bacteriology, microbiology or related scientific discipline, and three (3) years of experience working in a water or wastewater laboratory environment.

Acceptable Substitution

A Master's degree or higher in bacteriology, microbiology, or related scientific discipline can be substituted for one (1) year of experience working in a laboratory environment.

Required Licensing (such as driver's license, certifications, etc.)

Possession of a valid driver's license authorizing operation of a motor vehicle in California.

Other Qualifications

(Incumbents may be required to have different combinations of the listed qualifications, or more specific job-related qualifications depending on the position.)

Basic Competencies

(Needed at entry into the job in order to perform the essential duties.)

- Job Expertise – Demonstrates knowledge of and experience with applicable professional/technical principles and practices, Citywide and departmental procedures/policies and federal and state rules and regulations.
 - Knowledge of:
 - the principles of biology, microbiology, biochemistry, molecular biology, organic chemistry and inorganic chemistry,
 - modern laboratory procedures, techniques, instruments and equipment, and the ability to utilize such equipment,
 - mathematics, microbiology, morphology and taxonomy routinely utilized in an environmental laboratory.
 - Ability to:
 - perform physical, biological, microbiological and chemical analyses,
 - perform research work on problems of relevance to public health, microbiological, biochemical or chemical nature,
 - perform microscopic examinations with emphasis on organisms of sanitary significance,
 - interpret test results for water quality determinations.
- Communication Skills - Effectively conveys information and expresses thoughts and facts clearly, orally and in writing; demonstrates effective use of listening skills; displays openness to other people's ideas and thoughts.
- Computer Skills - Experienced with common business computer applications including but not limited to: MS Outlook, MS Word, MS PowerPoint, MS Access, and MS Excel.
- Teamwork and Interpersonal Skills - Develops effective relationships with co-workers and supervisors by helping others accomplish tasks and using collaboration and conflict resolution skills.

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- Analytical Skills - Approaching a problem or situation by using a logical, systemic, sequential approach.
- Creativity – Addresses objectives and problems while questioning traditional assumptions/solutions in order to generate creative ideas and new ways of doing business; exhibits creativity and innovation when contributing to organizational and individual objectives; seeks out opportunities to improve, streamline, reinvent work processes.
- Reliability - Completes quality work assignments in a timely and efficient manner; fulfills responsibilities and maintains confidentiality as appropriate.

Additional Competencies and/or Desirable Qualifications

(Competencies, knowledge, skills and abilities that are more position specific and/or likely to contribute to more successful job performance.)

- California Water Environment Association (CWEA) Laboratory Analyst Grade 2 Certification is desirable.
- CA-NV/American Water Works Association (AWWA) Water Quality Analyst Certificate is desirable.

Knowledge of:

- laboratory safety and quality assurance methods and procedures;
- local, state, and federal environmental regulations;
- advanced microbiological/molecular biology applications such as digital polymerase chain reaction (PCR);
- ability to perform routine and sophisticated biological and chemical determinations with regard to the environmental characterization of water, wastewater, industrial waste and related materials.

Ability to:

- develop and direct acute bioassay activities related to regulatory compliance requirements;
- operate instrumentation associated with typical operations in a microbiological laboratory;
- ability to assist in compiling information for research grants or proposals as needed.

DUTY NO.	<u>TYPICAL CLASS ESSENTIAL DUTIES:</u> (These duties and estimated frequency are a representative sample; position assignments may vary depending on the business needs of the department.) Duties may include, but are not limited to, the following:	FREQUENCY*
1.	Performs bacteriological, instrumental and wet chemical analyses of the water, domestic and industrial wastewater, effluent and related samples.	Daily
2.	Conducts regular microscopic examinations to identify bacterial, protozoan, and metazoan organisms associated with the wastewater treatment process.	Weekly
3.	Develops and performs the biomonitoring testing requirements for chronic/acute bioassays including the chemical testing of water quality parameters, organism husbandry, maintenance and euthanization of aquatic species.	Monthly

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DUTY NO.	TYPICAL CLASS ESSENTIAL DUTIES: (These duties and estimated frequency are a representative sample; position assignments may vary depending on the business needs of the department.) Duties may include, but are not limited to, the following:	FREQUENCY*
4.	Monitors and evaluates problems related to plant operations and laboratory analyses and recommends solutions to alleviate such problem situations.	As Required
5.	Performs the more complicated and research related biological, chemical and microbiological analyses of water, wastewater, industrial waste and related samples.	As Required
6.	Determines sampling procedures and programs, and recommends methods and procedures for implementation into normal laboratory operations.	As Required
7.	Implements and maintains the quality assurance/quality control program, including testing materials and adhering to documentation systems.	Daily/Several Times
8.	Supports the daily work activities within the laboratory including coaching or training fellow laboratory personnel and the preparation and completion of daily and weekly priorities and work schedules.	Daily
9.	Assists with the organization and analysis of information from industry, government agencies and the public, which may include hearings, workshops, seminars, etc.	As Required
10.	Compiles and records data onto worksheets; enters reviewed data and results of analyses into a Laboratory Information Management System (LIMS). Analyzes complex laboratory data using spreadsheets and databases.	Daily
11.	Reviews and validates analytical data, and associated quality control results at multiple stages in the reporting process.	Daily
12.	Troubleshoots or optimizes microbiological methods.	As Required
13.	Provides organization of record keeping and data retrieval; prepares written and verbal reports as requested.	As Required
14.	Sets up, calibrates, operates, and performs maintenance on a variety of laboratory instruments and equipment in one or more areas of the wastewater support section.	Daily
15.	Reads, interprets, and reviews published methods; drafts and revises standard operating procedures (SOPs) and work instructions.	As Required
16.	Maintains an appropriate inventory of laboratory supplies by preparing reagents, media, and standards; orders and received chemicals, supplies, and related equipment	Daily
17.	Utilizes work safety policies, practices and procedures in a wastewater facility.	Daily
18.	Sample collection, receiving, login, and preservation in one or more areas of the wastewater support section.	As Required
19.	Cleans and maintains the laboratory in an orderly fashion, including cleaning glassware, maintaining equipment, and disposing of hazardous waste.	Daily
20.	Performs other related duties and responsibilities.	As Required

*Frequency defined as Daily/Several Times, Daily, Weekly, Intermittent, or As Required

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PHYSICAL/ENVIRONMENTAL ELEMENTS

Depending on assignment, this classification may be Sedentary up to Medium Work.

- Sedentary Work: Exerting up to 10 pounds of force occasionally and/or a negligible amount of force frequently or constantly to lift, carry, push, pull or otherwise move objects, including the human body. Sedentary work involves sitting most of the time. Jobs are sedentary if walking and standing are required only occasionally and all other sedentary criteria are met.
- Light Work: Exerting up to 20 pounds of force occasionally, and/or up to 10 pounds of force frequently, and/or a negligible amount of force constantly to move objects. If the use of arm and/or leg controls requires exertion of forces greater than that for Sedentary Work and the worker sits most of the time, the job is rated for Light Work.

Medium Work: Exerting up to 50 pounds of force occasionally, and/or up to 20 pounds of force frequently, and/or up to 10 pounds of force constantly to move objects.

Possess ability to:

- Wear and use laboratory PPE;
- Work safely with hazardous and non-hazardous chemicals, fixed and portable analysis equipment used in the operation and monitoring of laboratory instruments;
- Operate a variety of lab instruments;
- Operate a motor vehicle and visit various sites within the Regional Wastewater Facility;
- Move between/within work areas, including but not limited to sitting, talking, hearing, kneeling, lifting, grasping, feeling, reaching, standing, walking, pushing, and making repetitive hand movements.

CLASSIFICATION HISTORY *Created 09/80, Rev. 04/81, Rev. 04/89, Rev. 09/11, Rev. 09/23*