



**City of Phoenix**

# **CHEMIST I ASSIGN: SPECIALTY**

JOB CODE 23412

Effective Date: 03/08

## **DISTINGUISHING FEATURES OF THE ASSIGNMENT:**

The Chemist I Specialty assignment includes three areas of specialty:

**Organics/Volatiles/Semi-Volatiles Section** incumbents are responsible for performing organic testing on drinking water and wastewater for volatile pesticides, herbicides, synthetic organic compounds, disinfection by-products, fuels, and taste and odor causing compounds. Incumbents then interpret sample results and generate traceable, technically valid and legally defensible data. Incumbents perform method development in support of the Clean Water Act (CWA), Safe Drinking Water Act (SDWA), Industrial Waste, Pollution Prevention programs, and new regulations.

**Inorganic/Metals Section** incumbents are responsible for performing compliance testing and method development in support of the Clean Water Act (CWA), Safe Drinking Water Act (SDWA), Industrial Waste, and Pollution Prevention programs. Incumbents provide technical and analytical expertise to support and maintain the laboratory license with the Arizona Department of Health Services (ADHS). Incumbents then interpret sample results and generate traceable, technically valid and legally defensible data.

**Biology/Microbiology Section** incumbents are responsible for performing compliance testing for microorganisms per EPA standard methods and method development in support of various regulatory programs and special studies for the Water Services Department. The Microbiology group regularly engages in the microbiological (total and fecal coliform) parasitology (cryptosporidium and giardia), and molecular biology (polymerase chain reaction) analyses of water and wastewater samples in accordance with federal and state laboratory requirements and internal quality assurance/quality control (QA/QC) policies and procedures.

This assignment differs from the base classification of Chemist I due to the greater quality control and documentation requirements to develop scientifically sound, legally defensible methods that ensure compliance and maintain the laboratory's ADHS licensure and NELAC certification.



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The fundamental reason this classification exists is to perform experienced professional work in the chemical and microbiological analyses of raw and treated water, or of raw sewage and effluent at a large municipal water or wastewater treatment plant, or to perform water quality compliance analyses to meet state and federal regulations. Chemists I are responsible for keeping plant personnel continuously informed of the efficiency of plant operations by performing laboratory analysis of samples. While the routine laboratory procedures are conducted by Laboratory Technicians, Chemists I give technical advice and assistance, and participate in the laboratory procedures. Incumbents are required to develop special techniques and investigations relating to specialized microbiological and chemical problems of the sewage and water treatment processes. Chemists I work under the general supervision of a Chemist II who evaluates work through direct observations and through an analysis of work reports.

### **ESSENTIAL FUNCTIONS:**

- Performs physical, chemical, and microbiological tests and examinations of water and/or wastewater using instruments and apparatus including pH meters, ultraviolet visible spectrophotometers, analytical balances, atomic absorption spectrophotometers, Mass Selective Detectors (MSD), Ion Trap Detectors (IPD), and gas chromatographies;
- Determines and updates the methods and procedures used in the examination of water and wastewater samples;
- Directs the collection raw, settled, and filtered water samples;
- Interprets test results and writes comprehensive analytical reports;
- Enters test results into the Laboratory Information Management Systems (LIMS) database;
- Writes and maintains proper QA/QC procedures in order to maintain analytical quality;
- Makes special chemical and microbiological studies in order to evaluate and improve plant processes;
- Maintains regular and reliable attendance.
- Demonstrates superior seamless customer service, integrity, and commitment to innovation, efficiency, and fiscally responsible activity.

### **Required Knowledge, Skills and Abilities:**

Knowledge of:

- The Principles, practices, and techniques of chemistry and microbiology.
- The operation and care of specialized laboratory equipment.

Skill in:



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- Laboratory manipulative techniques and following and adapting scientific methods and procedures.

Ability to:

- Perform a broad range of laboratory tests of water and sewage samples.
- Observe, compare, or monitor data to determine compliance with prescribed operating or safety standards.
- Comprehend and make inferences from written materials.
- Work in a variety of weather conditions with exposure to the elements.
- Communicate orally with co-workers, consultants and the public in face-to-face one-to-one settings.
- Enter data or information into a terminal, PC, or other keyboard device.
- Produce written documents in the English language with clearly organized thoughts using proper sentence construction, punctuation, and grammar.
- Work safely without presenting a direct threat to self or others.
- Perform microscopic work for extended periods of time.
- Work with chemicals, effluent, and other similar solutions using only normal protective equipment to conduct laboratory analyses of water or wastewater samples.

### **Additional Requirements:**

- Some positions require the use of personal or City vehicles on City business. Individuals must be physically capable of operating the vehicles safely, possess a valid driver's license and have an acceptable driving record. Use of a personal vehicle for City business will be prohibited if the employee is not authorized to drive a City vehicle or if the employee does not have personal insurance coverage.
- Some positions will require the performance of other essential and marginal functions depending upon work location, assignment, or shift.

### **ACCEPTABLE EXPERIENCE AND TRAINING:**

Two years of professional level experience in chemical and microbiological analyses in the public health or chemical laboratory field, and a bachelor's degree in chemistry, microbiology or a related field. Other combinations of experience and education that meet the minimum requirements may be substituted.