CITY OF GLENDALE

TITLE:	**Chemist**	**CLASS CODE:**	**960**
REPORTS TO:	**Water Quality Lab Manager**	**GRADE:**	**24**
DEPARTMENT:	**Utilities**	**FLSA:**	**E**

JOB SPECIFICATION DATE: July 1, 2005 bwg

JOB SUMMARY:

Performs chemical and microbiological drinking and wastewater analyses including interpretation of test results, maintenance of documentation and implementation of quality assurance programs. Operates and maintains analytical instruments. Trains other staff and reviews their work. Assists Senior Chemist in reviewing analysis data for quality assurance and in obtaining and maintaining ADHS certification. This classification includes three assignments: Inorganic Chemist, Organic Chemist, and Microbiologist.

ESSENTIAL FUNCTIONS:

1. Performs analyses of drinking and wastewater in accordance with EPA, ADHS, ADEQ, and City of Glendale regulations, guidelines, policies, and procedures.
2. Performs analyses of collection samples, samples from the drinking water distribution system, potable water wells, new water main construction, reservoirs, drinking water treatment plant processes, treated domestic wastewater, raw wastewater, irrigation lakes and wastewater treatment plant processes.
3. Maintains and orders supplies of glassware, reagents, media, parts, standards, standard cultures, and other materials.
4. Maintains records of laboratory data, quality control data, chains of custody, and other records in both paper and electronic format.
5. Troubleshoots equipment and places service call when equipment malfunctions.
6. Prepares division, department and regulatory agency reports and responses to public inquiries regarding chemical or microbiological testing results.
7. Evaluates alternative analytical methods.
8. Cross-trains to provide backup and assistance in other laboratory analyst assignments.

Inorganic Chemist Assignment:

9. Performs chemical analyses of inorganic compounds in untreated surface and ground water, treated drinking water, and wastewater including domestic wastewater, industrial process wastewater, and stormwater.
10. Performs inorganic chemical analyses including, but not limited to, hardness, chlorine residual, total inorganic carbon, nitrates, dissolved and suspended solids, sulfates, fluorides, iodine numbers, metals, and other properties.
11. Uses, maintains, and troubleshoots various instruments including ion chromatographs, TOC analyzers, spectrophotometers, specific ion analyzers, pH meters, specific ion meters and probes, conductivity meters, analytical balances, top-loading balances, media dispensers, filtration apparatus and computers for data management.

12. Makes all reagents and standards required for chemical analysis, and makes reagents used by the operational laboratories.
13. Develops and implements a comprehensive quality assurance program for reagents, standards, sample containers, equipment and instruments, including periodic analysis of external reference standards for collection and chemical testing of samples.
14. Develops new methods for inorganic analysis, using current equipment, to facilitate in-house control of data generation and to assist in operational control.

Organic Chemist Assignment:

15. Performs chemical analyses of organic compounds in untreated surface groundwater, treated drinking water, and wastewater including domestic wastewater, industrial process wastewater, and stormwater.
16. Uses, maintains, and troubleshoots various instruments including gas chromatographs with various detectors such as mass spectrographs, electron capture detectors, photoionization detectors, and flame ionization detectors; pH meters, analytical balances, top-loading balances, filtration apparatus, extraction equipment and computers for data management.
17. Develops new methods for organic analysis, using current equipment, to facilitate in-house control of data generation and to assist in operational control.
18. Makes all reagents and standards required for organic chemical analysis.
19. Develops and implements a comprehensive quality assurance program for reagents, standards, sample containers, equipment and instruments. This includes periodic analysis of external reference standards for collection and chemical testing of samples.

Microbiologist Assignment:

20. Performs microbiological analyses of samples from the drinking water distribution system, potable water wells, new water main construction, reservoirs, drinking water treatment plant processes, treated domestic wastewater, raw wastewater, irrigation lakes, wastewater treatment plant processes, industrial process wastewater and stormwater.
21. Performs microbiological analyses including, but not limited to, presence/absence tests for total and fecal coliform bacteria; multiple-tube fermentation estimation of total and fecal coliform numbers; heterotrophic plate counts; isolation of bacterial strains; metabolic characterization of bacterial isolates; and microscopic examination of bacterial isolates including Gram stain.
22. Uses, maintains, and troubleshoots laboratory instruments including incubators, autoclaves, microscopes, pH meters, specific ion meters and probes, conductivity meters, analytical balances, top-loading balances, media dispensers, filtration apparatus, and computers for data management.
23. Trains and provides lead supervision to other laboratory staff.
24. Prepares division, department, and regulatory agency reports and responses to public inquiries regarding microbiological testing results.
25. Makes all reagents and media required for microbiological testing.
26. Develops and implements a comprehensive quality assurance program for media, reagents, sample containers, equipment, instruments, and reference culture microorganisms, including the analysis of external reference standards, for microbiological sample collection and testing.

SECONDARY FUNCTIONS:

27. Provides assistance to operations laboratory staff, and operational and field personnel.
28. Reads journals, Code of Federal Regulations, and Federal Register; attends seminars and meetings to stay abreast of changing regulations and procedures.
29. Performs other related duties as assigned.

KNOWLEDGE, SKILLS, ABILITIES:

Knowledge of:

Principles, practices and techniques of water quality analysis.
Operation and care of specialized laboratory equipment.
Laws and regulations governing water quality, drinking water production, service, and wastewater treatment.

Skill in:

Laboratory techniques and in following and adapting scientific methods and procedures.
Training others.
Operating, maintaining, diagnosing and troubleshooting laboratory equipment, computers, and analytical instruments.

Ability to:

Operate specialized water testing equipment.
Perform and interpret a variety of laboratory tests of water samples.
Prepare analytical reports.
Evaluate and propose new methods of analysis.
Revise analytical methodology on a case by case basis.
Supervise and Review the work of others.
Communicate effectively both orally and in writing.
Establish and maintain effective working relationships with employees and various agency officials.

WORKING CONDITIONS:

Laboratory setting work will involve various acids, solvents, chemicals, explosive gases, high temperature equipment and bacteriological hazards, which if not handled properly are hazardous and toxic. Treatment plant setting work will involve collecting samples for analysis and work around large tanks, grating, high-voltage electrical lines and equipment, motors, and hazardous chemicals, which if not handled properly are hazardous. Field setting work will involve the collection of water samples from the distribution system, irrigation lakes, or other locations, and may involve encounters with animals and hazardous traffic conditions.

MINIMUM QUALIFICATIONS:

TRAINEE:
Bachelor's Degree in chemistry, microbiology, or related physical science.

REGULAR STATUS:
Two years experience as a chemist or microbiologist.
Any equivalent combination of training and experience, which provides the required knowledge, skills, and abilities, is qualifying.

SPECIAL REQUIREMENTS:

Applicants will be required to undergo drug testing prior to employment and will be subject to further drug and alcohol testing throughout their period of employment in accordance with the City of Glendale Substance Abuse policy.
Possession of a valid Arizona driver's license.
Microbiologist assignment requires the ability to obtain within two years of hire, Arizona class 1 certification for drinking water distribution system operation.