CLASS SPECIFICATION

Class Code: 3030
Date Est: 10/1981
Last Rev: 03/2019
Last Title Chg: 06/2002
FLSA: exempt
Probation: 12 months

SENIOR HYDROGEOLOGIST
A) Flood Management Option
B) Contaminant Hydrogeology Option

DEFINITION

Under general supervision, performs a variety of technical duties in the collection and analysis of hydrology, hydrogeology and/or groundwater contamination data; manages surface and groundwater resources; provides project oversight for technical staff; assists with resolving problems involving hydrology, hydrogeology, contaminant hydrogeology, contaminant impacts to water supplies and water use; and performs related work as required.

EXPERIENCE AND TRAINING REQUIREMENTS

A bachelor's degree from an accredited college or university in hydrology, hydrogeology or a closely related field AND two years of full-time experience as a Hydrologist (Option A) or Hydrogeologist (Option B); OR an equivalent combination of education and experience.

LICENSE OR CERTIFICATE

A valid driver's license is required at the time of appointment.

DISTINGUISHING CHARACTERISTICS

This is the advanced journey level in the hydrogeologist series. Positions at this level perform with the highest degree of independence and are distinguished from the other hydrogeologist job classes by the level of responsibility assumed, lead responsibility (including technical leadership and expertise, project planning and project management), and the complexity of duties assigned.

SUPERVISION EXERCISED

May exercise direct supervision over technical and support staff

EXAMPLES OF DUTIES *(The following is used as a partial description and is not restrictive as to duties required.)*

ALL OPTIONS:
Construct, improve, use and/or review surface water and/or groundwater models for the local area.

Measure flow rates of streams to assess storm water run-off and/or to determine estimated recharge to aquifers; compile monthly and annual discharge summaries using measured stream flow.

Oversee surface water monitoring and water well drilling programs including design, development of specifications, management and/or review of construction and testing results.

Measure water level in streams and wells throughout the County to determine trends or fluctuations, and use results to support long-term planning and decision making.

Assist in managing and implementing special projects and prepare reports describing project activities using computer graphics in report preparation.

Prepare reports describing project activities using computer graphics in report preparation and present project results at public meetings.

Collect surface water and groundwater samples according to proper and appropriate procedures and protocols.

Direct and coordinate the collection and development of hydrologic and meteorological data; design, install, equip and maintain gauges used to monitor and collect hydrologic and meteorological data.

Provide support to the public on surface water and/or groundwater issues.

Ensure that assigned personnel perform duties and responsibilities in a safe and prudent manner that does not expose them or others to unnecessary harm or risk of on-the-job injury.

OPTION A:
Operation of the Regional Flood Warning System including design, construction, maintenance and fiscal oversight.

Responsible for radio telemetry equipment, archival data storage and data collection software operation.

Act as coordinator for the Truckee River Flood Warning Plan including technical revisions and operation during significant weather events.

Provide technical support for Regional Emergency Operations Management.

Design, construct and coordinate the installation and management of data collection systems for river and lacustrine restoration areas and other surface water and groundwater monitoring programs.

Operate computer models using various land use and precipitation scenarios to determine flood flows and flood elevations.

Evaluate existing hydrologic data to develop conceptual models, simulating actual surface water conditions.

Oversee surface water monitoring program including design and construction, stream hydrography and associated annual summaries for weather event and regional resource analysis.

OPTION B:
Design, conduct and/or review geophysical programs with respect to hydrogeologic studies.

Design, construct and coordinate the installation and management of data collection systems for groundwater monitoring programs.

Evaluate existing hydrogeologic data and groundwater contaminant data to develop conceptual site models.

Assess the magnitude and extent of groundwater contamination and create contaminant iso-concentration contour maps of groundwater contaminant plumes.

Develop potentiometric surface maps.

Create hydrogeologic cross-sections and assess vertical distribution of groundwater contaminants.

Assess groundwater contaminant plume dynamics and make recommendations for the management and/or mitigation of contaminant plumes.

Evaluate groundwater pumping data to delineate wellhead protection areas, assess groundwater capture and assess influence on plume capture and containment.

Perform aquifer/well pumping tests on municipal water supply wells and monitoring wells; conduct, design and/or review tests and interpret results from aquifer testing and the influence of municipal water supply well pumping on contaminant plumes; recommend long-term pumping rates and develop contaminant plume capture estimates from testing results.

Design and supervise construction of wells used for groundwater quality monitoring programs.

Perform water quality sampling using different sampling methods and equipment; compile water quality results in project specific formats.

Initiate, oversee and review technical work performed by contractors to ensure the focus and results/recommendations are directly relevant to task/project/program goals and objectives.

Oversee well drilling programs including logging drill cuttings; identifying types of geologic materials being drilled and locating water-bearing zones; well design, development of well specifications, management and/or review of well construction and testing results.

Run computer models with various recharge data, municipal water supply well pumping/flow rates and durations, and groundwater contaminant distribution considerations to delineate wellhead protection areas, analyze aquifer testing data and assess contaminant transport, mass flux, and/or contaminant plume capture or containment.

Monitor artificial recharge and potential groundwater quality benefits.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Full Performance *(These may be acquired on the job and are needed to perform the work assigned.)*

Knowledge of:
ALL OPTIONS:

Department/division policies and procedures.

Computer software specific to the department/division/program.

Specialized data collection methods and data analysis methods related to job assignments.

OPTION A:
Surface water hydraulics and related modeling techniques.

Meteorological sensors and VHF telemetry.

OPTION B:
Groundwater flow and contaminant transport modeling techniques.

Ability to:
ALL OPTIONS:
Make public presentations concerning technical material.

Prepare contract specifications.

Perform complex technical analysis of water quantity and water quality data.

OPTION A:
Perform hydrologic and hydraulic modeling of data and forecasting of information.

OPTION B:
Create conceptual site models for use in the assessment, management and mitigation of contaminant sources and contaminated groundwater.

Perform hydrogeologic modeling of data and forecasting of information.

Entry Level *(Applicants will be screened for possession of these through written, oral, performance or other evaluation methods.)*

Knowledge of:
ALL OPTIONS:
Principles and practices of project development, coordination and management.

Geology, hydrology and hydrogeologic concepts, principles and practices.

Principles of chemistry, mathematics and hydraulics as they relate to hydrology and hydrogeology.

Database functions.

OPTION A:
Surface water/precipitation gage operations and construction practices.

Riparian/river restoration and wetlands monitoring.

Emergency management procedures and meteorological forecast products.

OPTION B:
Well drilling operations and construction practices.

Aquifer testing methods.

Principles of contaminant hydrogeology.

Ability to:
ALL OPTIONS:

Develop and use computer models.

Operate a personal computer and a variety of commercial software packages including spreadsheets and databases.

Analyze data, develop valid conclusions and make decisions and recommendations that are relevant to project goals and objectives.

Read, interpret and apply regulations, policies and procedures.

Communicate effectively, both orally and in writing.

Perform and/or supervise field activities.

Maintain effective working relationships with outside contractors, the public, division staff and representatives of other departments.

OPTION A:
Plan, develop, manage and coordinate projects regarding surface water and severe weather events.

OPTION B:
Plan, develop, manage and coordinate projects regarding the protection, prevention and mitigation of groundwater contamination.

SPECIAL REQUIREMENTS (*Essential duties require the following physical skills and work environment.)*

Ability to sit for extended periods. Ability to frequently stand, walk, crouch, stoop, and kneel. Ability to walk on uneven and slippery surfaces. Ability to lift and move objects weighing up to 50 lbs. Ability to use water measuring devices such as submersible pump, meteorological equipment, aquifer testing equipment, hand tools, and office equipment including computers, copiers, telephone and FAX machine. Ability to work under conditions involving exposure to dust and electrical energy. Ability to occasionally use personal protective equipment such as masks, goggles, gloves, etc. Ability to work outdoors in various types of weather.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards.