

## Professional Geologists

Job Code	Job Title	Pay Grade
8507C3	Professional Geologist	35
8508C3	Professional Geologist Senior	37

### CONCEPT:

The primary duty of employees in this job class involves conducting complex professional licensed geological research, investigations and laboratory analyses. Work may involve investigating, collecting, reviewing and analyzing geological samples and data.

### TASKS:

- Investigate the composition, structure, and history of the Earth's crust through the collection, examination, measurement, and classification of soils, minerals, rocks, groundwater, and fossil remains.
- Assess ground and surface water movement in order to provide advice regarding issues and the restoration of contaminated sites.
- Identify geology-based risks and provide advice on ways in which potential damage can be mitigated.
- Conducts field and laboratory research related to mineral research, rock formations and soil conditions affecting geotechnical engineering designs.
- Directs and participates in all activities of engineering a geological survey for design, construction, maintenance and remediation projects; including detailed subsurface investigations, and preparation of maps; plan profiles, cross sections and complex geotechnical reports.
- Evaluate salt solution mining wells, LPG storage areas, surface mining and underground storage tanks, industrial waste injection wells and improperly abandoned or constructed water wells to detect and prevent sources of surface and subsurface pollution.
- Examines applications for underground injection of oil field brine or drilling permits for oil and gas wells, underground porosity gas storage wells, as well as seismic and cathodic protection boreholes; ensures applications comply with state rules and regulations; researches available data; works with oil and gas operators and contractors to ensure that applications are in compliance.
- Measure characteristics of the Earth, such as gravity and magnetic fields, using specialized equipment
- Prepares final recommendations for approval or denial of drilling permits, underground injection applications, and underground porosity gas storage permits.
- Reviews well construction information and prepares recommendations for both routine and complex well plugging operations that are consistent with state rules and regulations.
- Prepares various subsurface maps and geologic sections related to petroleum explorations and production operations or underground porosity gas storage operations.
- Coordinates and participates in geologic field studies and/or investigations, and projects related to groundwater pollution investigations and performs area groundwater quality surveys related to the development of regulatory standards or resolution of the problems.
- Completes geologic and hydrogeologic reviews and evaluations of applications for pollution control facilities, hazardous and solid waste sites, and mining operations; evaluates proposed plugging programs of abandoned wells and oil field waste management facilities.
- Interacts with consultants to negotiate remedial work and oversees all aspects of remediation.
- Interprets and provides explanation of data on environmental geology to industries, government agencies and/or prepares and presents testimony or exhibits at hearings and public meetings.
- Reviews and evaluates site safety and waste management plan proposals for completeness and accuracy.

- Investigates spills, recommends cleanup methods and conducts tests to determine the severity and extent of the environmental contamination; writes specifications for review of such projects.
- Coordinates and participates in major land use planning studies involving the use and interpretation of geologic data.
- Conducts bridge rehabilitation studies, assists in developing plans to rehabilitate bridge structures, and writes geological reports concerning foundations for new bridge construction.
- Conducts investigations or surveys, and collect samples for lab analysis and analyzes field samples and data to identify rock and soil types, groundwater conditions and resources, quality mineral resources, and geothermal energy, petroleum and natural gas potential, or instability of earth instability problems.
- Reviews published maps and current project data, participates in geological surveys, drafts geological maps and cross sections or reduces and analyzes field data, and conducts statistical mapping and compiles and interprets information from geologic source documents and laboratory test results, drill logs, and other studies.
- Reviews preliminary contract plans and specifications to ensure that engineering designs are consistent with geologic conditions or standards.
- Evaluates groundwater conditions and hazard potentials to determine feasibility, location, and safe and economical development of projects.
- Obtains and provides technical information, advice, or assistance to agency personnel, private industry, professional peers, and local, state and federal officials to answer questions or resolve problems and ensure compliance with rules and regulations.
- Prepares and reviews hydrogeologic studies of subsurface information to recommend surface pipe setting depths, cementing and both routine and complex plugging procedures, and construction and abandonment procedures in environmentally sensitive areas.
- Examines and recommends approval of applications for underground injection of oil field brine or the transfer of ownership of oil, gas, salt water disposal, injection leases and permits.
- Acts as field geologist on projects including logging test drilling, designing and constructing monitoring points, designing and implementing aquifer tests, witnessing various production and integrity testing of wells, sampling, documenting field activities and directing field teams.
- Plans, conducts, and directs petrographic evaluations of rock, mineral, aggregate, concrete and asphalt samples, conducts forensic analysis of pavement failures, writes petrographic reports and serves as an expert witness on issues related to petrographic and forensic work.
- Conducts and directs total air analysis testing of hardened concrete, evaluating the air void system in hardened concrete samples for determination of concrete paste freeze-thaw resistance, determination of the air void size distribution, spacing factor and degree of entrainment throughout the concrete sample, writes reports relating to this specialized testing.

## **LEVELS OF WORK**

- Class Group consists of two classes.

**Professional Geologist:** The employee is a full performing licensed geologist. The employee has technical expertise and is expected to represent the agency in their subject area of specialty when interacting with local, State, and Federal agencies, private industry, professional peers, and the public. This position may lead or supervise staff or oversee contract workers.

**Minimum Requirements:** Professional geology license recognized by the Kansas Board of Technical Professions.

**Professional Geologist Senior:** This level is considered a state expert in a field of geological specialization. This class handles administrative and advanced work in a geology, environmental geology and/or groundwater program. Work involves planning, coordinating and overseeing the execution of technical projects, preparing designs, plans, estimates, and calculations, and overseeing inspections, testing, and may act as a manager. Work includes formulating and implementing the program in adherence to policies, standards and procedures; training; and may supervise professional and technical staff in developing and accomplishing goals and objectives. Incumbents perform in an administrative and policy role in a specialized area of geology or a district or state wide program.

**Minimum Requirements:** Professional geology license recognized by the Kansas Board of Technical Professions plus 4 years of experience as a licensed geologist.

NC: 9/15

REV: 11/22

REV: 6/24