

HYDROLOGIST 1

KIND OF WORK

Professional work in hydrology, hydraulics, hydrogeology, water resource management, and ground water quality protection.

NATURE AND PURPOSE

Under immediate supervision, performs hydrologic and/or hydrogeologic data collection, data analysis and program administration work in order to promote the wise use, conservation, and preservation of the State's water resources. This position requires a basic specialized level of knowledge and application of hydrologic theory and principles typically obtained in a four-year college course of study. Problem-solving involves thinking which is guided and circumscribed by substantially diversified procedures and specialized occupational standards. The incumbent is presented with differing situations and must search for solutions within an area of learned things; performs related work as required.

EXAMPLES OF WORK (A position may not include all the work examples given, nor does the list include all that may be assigned.)

Recommends hydrologic field investigation design to ensure that accurate and appropriate physical and hydrologic data is available for use by department administrators in making water resources management decisions by reviewing permit applications; reviewing, analyzing and interpreting data from existing files to identify missing elements of information; and applying knowledge of department policy and hydrologic technique to identify the most appropriate method of data collection.

Drafts final reports, including narratives, illustrations and graphic displays, for management so that project team activities and decisions are well documented and presented in appropriate form by conferring with other team members to determine appropriate format and needed graphics; writing narratives and gathering illustrations; drafting presentations or demonstrations, where necessary, for use by project management; and compiling all important information into appendices, attachments and special reports.

Reviews and evaluates individual water resources permit applications so that water resources utilization and alteration proposals are consistent with DNR policies by reviewing each proposed water development project to determine what information is missing from the application, requesting additional necessary information from each permit applicant, requesting field investigations and recommendations if needed, and preparing permits or permit denials for signature of higher authority.

Investigates and analyzes complaints or conflicts related to alteration of public waters so that interests of both sides of the conflict and the public's interests are safeguarded by gathering data in the field and central office, recommending alternative solutions, informing interested parties and other public agencies of progress toward resolution, and preparing draft orders modifying permits or letters resolving disputes for signature of higher authority.

Assists DNR regional and area waters staff in handling the more routine investigations and analysis related to water development permits, water bank program and grants, and hydrologic surveys and studies so that area hydrologists can concentrate on the more difficult investigations along with handling the land use management function.

Provides hydrogeologic evaluations of proposed new municipal and industrial land disposal/treatment facilities and expansions so that sites with unsuitable ground water conditions are identified and the PCA can require appropriate design measures to protect ground water by reviewing available information about the soils, ground water occurrence and movement, and area water quality and use; requesting any additional site investigation work needed for an adequate hydrogeologic evaluation; and making written recommendations regarding acceptability of the site for land disposal/treatment.

Assists in conducting the technical aspects of PCA conducted site investigations and in providing a hydrogeologic assessment of the data produced so that environmental and public health impacts associated with potential hazardous waste sites can be determined by reviewing all existing information related to the site and locating and reviewing missing information such as topographic maps, surficial and bedrock geology maps, hydrologic maps, photographs, well logs, soil surveys, site plot plans, historical maps and plans, and pertinent technical literature; assisting in developing and administering site inspection contracts; participating in field inspections, soil and water sampling, and monitoring site inspection contractor on-site activities during site inspection investigation; overseeing the technical implementation of PCA conducted site investigations; and, evaluating the sample data and site inspection final reports from the contractor, the results of PCA conducted site inspections and making conclusions and/or recommendations for further actions.

Reviews and recommends approval, modification, or denial of permit applications, closure plans, and ground water monitoring plans for hazardous waste facilities related to the hydrogeology of the proposed site to ensure that hazardous waste facilities are located, constructed, operated, and monitored in compliance with State and federal rules and regulations by reviewing the hydrogeological aspects of hazardous waste facilities, conducting field investigations and site inspections of hazardous waste facilities, and assisting and recommending to project reviewers and permittees methods of investigating and/or monitoring the hydrogeology of sites or facilities.

Assists in managing and enforcing a program regulating and licensing water well contractors and registration of exploratory borers and monitoring well engineers in order to protect ground water quality by enforcing rules for the construction of water wells, exploratory borings, heat pump/vertical heat loops and monitoring wells; preparing reports on investigations and complaints pertaining to well drilling activities; Hydrologist 1

working with local governmental units on proper well construction and establishment of well inspection programs; and providing advice by phone and correspondence regarding well drilling, code requirements, hydrology, and geology.

Assists in administering the program for proper sealing of abandoned wells in order to prevent contamination from entering other wells and the ground water system by enforcing rules and regulations for the sealing of abandoned wells, investigating wells reported to be abandoned and determining proper abandonment methods, providing technical assistance to local units of government relative to well abandonment, and promoting abandonment programs at the local governmental level.

KNOWLEDGE, SKILLS AND ABILITIES REQUIRED

Knowledge of:

Principles of hydrology, hydraulics, and hydrogeology.

Principles and practices of land use planning and land use controls.

Principles and practices of ground water protection.

State water law.

Principles and practices of electronic data processing.

Ability to:

Understand and utilize land descriptions.

Communicate effectively verbally and in writing.

EST.: 10/29/69

Rev.: 12/1/76

3/81

7/87

T.C.:

Former Title(s):