

HYDROLOGIST 2

KIND OF WORK

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

NATURE AND PURPOSE

Under general supervision, performs hydrologic, hydrogeologic, ground water protection, or water resource management work 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; solves problems in differing situations requiring search for solutions within area of learned things, occasionally solving problems in variable situations requiring analytical, interpretive, evaluative, and/or constructive thinking with latitude limited by precedents, well-defined policy and supervisory review; 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.)

Administers an area program overseeing some zoning activities of local governments and provides information for local officials and the public regarding water-related land use controls provided in statute and rule so that controls are properly implemented and administered at the local level consistent with DNR objectives and policies by assisting local governments with activities related to development, adoption, and administration of zoning controls required within shoreland, floodplain, and Wild and Scenic River Districts; reviewing and processing local government actions needing DNR approval on proposed ordinance amendments, shoreland management classification changes, planned unit developments and cluster developments; monitoring local governmental zoning actions involving the granting of variances, conditional uses, inconsistent land subdivisions, final subdivisions and re-zonings; and providing hydraulic and hydrologic analyses and/or technical assistance to cities and counties on problems relating to flooding, lake pollution, land use zoning, subdivision, sewage treatment, shoreland erosion, shoreland alteration, building codes, floodplain engineering data, flood proofing, flood warning systems, and storm water management.

Conducts evaluations within a geographical area and recommends decisions regarding the water permit program in accordance with statute, rule, and DNR Water Resources Permits Manual so that works affecting the course, current, and cross-section of protected waters, water appropriations, and dam safety conform to the criteria established in State water laws by assisting public agencies, engineers, planners, and private individuals in making permit applications and providing information concerning design criteria and standards for water resources projects; conducting and/or directing field investigations and recommendations from affected DNR

units, other agencies and units of government and affected citizens groups; gathering water resource data and performing any hydraulic and/or hydrologic analyses necessary to determine the impact of a proposed project; negotiating alternative acceptable solutions which result in minimal environmental impact; recommending decisions on applications consistent with State rules and policy directives, including the description of approved work and special conditions of limitations to ensure reasonable and practical implementation and enforcement; preparing and providing expert testimony in contested case public hearings with regard to final disposition of permit applications, and coordinating testimony of DNR units and the experts; and conducting follow-up inspections of completed projects effectiveness and degree of compliance.

Conducts hydrogeologic evaluations of proposed new or expansions of municipal and industrial land disposal/treatment facilities so that sites with unsuitable ground water conditions are identified and the PCA can require appropriate design measures to protect ground water by reviewing the available information about the soils, ground water occurrence and movement, area water quality and use, and making recommendations regarding the acceptability of the site for land disposal/treatment; identifying and requesting any additional site investigation work needed for an adequate hydrogeologic evaluation, and meeting with the owner/operator or consultant as needed; making recommendations about the adequacy of design features intended to minimize ground water pollution and needed changes in the locations, construction, or number of monitoring wells; preparing technical reports and briefing memos for agency management and staff, the PCA Board, and the Office of Planning and Review when the hydrogeologic evaluation is for an environmental assessment document; and providing hydrogeologic expertise and testimony at public meetings and hearings concerning the proposed facility.

Performs technical investigations and hydrogeologic assessments of assigned hazardous waste and spill sites so that environmental and public health impacts can be determined and assists in developing and implementing remedial measures for those sites by reviewing all existing information relating 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; identifying the need for and outlining PCA requirements to the responsible party(ies) for the investigation of ground water flow directions and rates, contaminant migration, dispersion and sorption, and health risks in order to assess the contaminant impact and implement response action; participating in field inspections, soil and water sampling and monitoring of investigations and response actions; and evaluating sample data generated by PCA staff and responsible parties, evaluating results, conclusions, and recommendations of responsible parties site investigation reports, and developing PCA conclusions and recommendations, and requirements of responsible party(ies).

Assists clean-up site project leader and attorneys in taking enforcement actions against violators to initiate appropriate response actions on assigned hazardous waste sites by preparing, organizing and interpreting technical materials for Information Requests, Requests for Response Action and Consent Orders; drafting the technical portion of Consent Orders and Requests for Response Action; negotiating, as part of a team with the project leader and attorneys, Consent Orders with responsible parties; preparing, organizing and interpreting technical materials to assist with formal enforcement actions including litigation; acting as the PCA's major technical witness for the team in most litigations; and negotiating settlements of litigation as part of the site team.

Prepares and provides testimony in contested case public hearings with regard to final disposition of permit applications within jurisdiction of a DNR area and coordinates testimony of other DNR program representatives so that determinations can be made regarding the nature, extent, and factuality of the alleged violation and appropriate course of action to be taken by determining DNR jurisdiction and establishing public values, delineating the violations by topographic surveys, etc., and determining the degree of impact on natural resources; advising court officials on technical aspects of State rules and policies; and presenting testimony during the prosecutions of water law violations.

Identifies priority ground water pollution areas, major types of non-point source pollution affecting ground water, relationships between ground and surface water pollution, management practices and their effect on ground water, and assists in developing an overall strategy to effectively deal with non-point source pollution of ground and surface water in order to integrate ground water protection into the ongoing development of the Minnesota Non-Point Source Management Program by reviewing information developed by the federal EPA and other states on non-point source pollution, determining factors which characterize the potential for ground water non-point source pollution and the potential for contamination of surface waters by polluted ground water, identifying categories of non-point source pollutants and activities contributing to non-point source ground water pollution, preparing a non-point source strategy report, identifying ground water quality parameters to be monitored and levels necessary to ensure resource protection, and preparing and making oral presentations regarding the non-point source program.

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 and rules.

Principles and practices of water resources management.

Principles and practices of electronic data processing.

Local, state and federal water resource programs.

Ability to:

Coordinate activities related to one or more water resource projects or programs of moderate size and complexity.

Understand and utilize land descriptions.

Communicate effectively verbally and in writing.

Est.: 10/20/69

Rev.: 12/1/76

3/81

7/87

T.C.:

Former Title(s):