STATE OF MINNESOTA
CLASS SPECIFICATION

Class Code: 000959
Barg. Unit(s): 214

HYDROLOGIST 3

KIND OF WORK

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

NATURE AND PURPOSE

Under limited supervision, directs an important phase of the statewide water resource management program. This employee may oversee the work of other professional and technical staff in a leadwork capacity and may supervise clerical support staff to provide for the wise use, conservation, and preservation of the State's public waters. This position requires a seasoned technical proficiency gained through wide exposure or experiences combining a broad grasp of involved practices and precedents and theory and principles of hydrology, hydraulics, hydrogeology, ground water protection, and/or water resource management; develops procedures for lower level hydrologists, and often solves problems requiring inductive thinking to develop new solutions with discretion limited by functional precedents and policies; 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.)

Provides testimony and acts as a technical expert of the State on stream hydrology and hydraulics or ground water management in hearings and court proceedings involving water allocation and management in order that the State's position be adequately represented by reviewing and commenting on reports and documents containing technical information and appearing as a witness in public hearings and court proceedings on behalf of the State.

Coordinates collection of data, develops computer capabilities for organizing and analyzing data, and performs technical evaluation of data concerning availability, distribution, quality and use of surface and ground water so that statewide DNR ground water management policies and decisions are technically supported by establishing data collection program needed to project impacts of future water use scenarios on both surface and ground water, obtaining and compiling existing software for selected computer models, adapting computer programs to be compatible with agency computer facilities, and preparing reports documenting model assumptions and calibration procedures.

Develops recommended program policies, procedures, and guidelines, including developing program operations manuals, model land use controls, technical and informational reports, policy papers, and proposals for changes in regulations or legislation so that the overall effectiveness of the statewide DNR Flood Plain Management Program can be maintained by developing program implementation procedures including the updating of the Flood Plain Management Program Operations Manual; interpreting, developing, amending, and modifying overall program policies to reflect comprehensive flood plain management; providing advice and coordinating technical assistance for regional office staff when difficult problems arise during the region's review of development proposals and flooding situations; and proposing changes or additions to statewide flood plain management legislation and regulations along with those of related land use programs when needed to increase or expand program effectiveness.

Develops with other central office staff training materials and conducts training sessions and workshops for field (regional, area, and/or district) staff, local officials, and other public decision makers in a hydrological or hydrogeologic program or area of speciality so that program objectives and procedures are understood and field staff are assisted in carrying out their responsibilities by cooperating with other division staff to organize and conduct training for field staff (and local officials), creating taped or written presentations in an area of hydrological program specialization for use by field staff or local officials, and assisting in the training of new central office and field staff on a one-to-one basis.

Applies hydrological and other technical expertise to develop the requirements for the installation, operation, and monitoring of underground storage tanks and then develop State rules so that the rules will be effectively administered, enforceable, and protect the environment and public health by reviewing the existing State and federal statutory authority, rules, and programs regarding underground storage tanks; identifying deficiencies in the USEPA program due to the minimal coverage of hydrogeology, monitoring, and environmental protection in the existing rules; conducting research of hydrogeologic and other technical literature, interviewing technical specialists, and applying expertise in hydrogeology to develop program requirements; organizing and translating these requirements into the language and format of rules; evaluating portions of the rules governing permitting, engineering, and financial assurance for technical soundness and consistency with the hydrologic portions of the rules; and revising each rules draft by applying technical expertise to evaluate and resolve conflicting recommendations, conducting additional research as necessary, and informing affected staff of changes.

Coordinates and directs the technical investigation and hydrogeologic assessment by PCA staff of assigned difficult (complex geology, multiple aquifers, major pollution impacts, potential or known releases of hazardous substances) hazardous waste sites; evaluates results, conclusions and recommendations of site investigation reports; and develops PCA conclusions, recommendations and requirements for polluters so that environmental and public health impacts can be determined and remedied 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; 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).

Works with project coordinator, on-site inspectors, and Attorney General's staff in initiating enforcement action against polluters so that appropriate response actions are taken to clean up hazardous waste sites by preparing, organizing, and interpreting technical materials and taking the lead to draft technical portions of Requests for Response Action and Consent Orders; negotiating Consent Orders as part of a team with responsible parties; and acting as the PCA's major technical witness for the team in most litigations.

Reviews, provides direction, and coordinates the geological and hydrogeologic investigation of sanitary landfills which are sufficiently complex or sensitive to be included on the State Superfund's Permanent List of Priorities or Environmental Protection Agency's National List of Priorities so that the necessary information, assessment, and mitigative measures are carried out by the responsible parties at the landfills by identifying the need for investigation and research into ground water flow directions and rates, contaminant migration, dispersion and sorption, and health risks in order to assess the contaminant impact and implement mitigative measures; reviewing and recommending revisions and/or approval of proposed work plans that will delineate the necessary site geohydrology assessment work tasks to be performed by the responsible parties; reviewing and interpreting all pertinent hydrogeologic, soil and engineering data and reports, determining adequacy of the reports and the need for additional investigation, and recommending mitigative measures for the landfill site as necessary; preparing written statements for PCA Board memoranda, legal and enforcement documents and items for the Public Information Office; providing recommendations to supervisor for the effective communication and resolution of matter establishing PCA policy; and providing information and testimony as assigned at agency board meetings, administrative hearings, and public meetings.

Assists as a leadworker for newly hired hydrogeologists so that new staff are trained and developed to the point that they can handle projects more independently by conducting quality control reviews of new hydrogeologist project review summaries, conducting in-house training meetings to discuss hydrologic review policies and programs, and attending meetings with the new hydrogeologists on their assigned projects.

Organizes and leads a team of toxicologists, hydrologists, and other specialists from the Department of Health and Pollution Control Agency to develop ground water quality standards and related health risk policies so that PCA's statewide solid waste management policies and other ground water programs adequately and consistently protect ground water and the public health by preparing and maintaining a timetable; organizing subgroups to research and draft recommendations on individual issues; establishing a format for the issue papers; organizing the technical review of the papers; and compiling them into a comprehensive report of analysis, findings, and recommendations.

Applies technical expertise to develop the solid waste facility requirements to hydrogeologic evaluations, ground water performance standards, ground water monitoring, and related areas, and then translates these requirements into the structure of State rules so that the rules can be effectively administered, enforceable, and adequately protect the water resources and public health by reviewing the existing State and federal statutory authority, rules, and programs regarding solid waste facilities; identifying deficiencies in the USEPA program due to the minimal coverage of hydrogeology, monitoring, and environmental protection in the existing rules; conducting research of hydrogeologic and other technical literature, interviewing technical specialists, and applying expertise in hydrogeology to develop program requirements; organizing and translating these requirements into the language and format of rules; evaluating portions of the rules governing permitting, engineering, and financial assurance for technical soundness and consistency with the hydrologic portions of the rules; and revising each rules draft by applying technical expertise to evaluate and resolve conflicting recommendations, conducting additional research as necessary, and informing affected staff of changes.

Coordinates the development and implementation of a comprehensive ground water monitoring program for point and non-point sources of pollution to provide information for permit review, operation and enforcement phases to ensure adequate monitoring and protection of ground water resources by identifying and selecting a ranking system to prioritize facilities and related ground water resources; taking the lead in the development of a program that incorporates hydrologic, soils, geotechnical and waste treatment principles to ensure proper monitoring of facility performance and resulting ground water quality; taking the lead in the evaluation of non-point source of pollution factors which impact ground water resources; identifying and selecting a prioritization scheme to rank ground water resources with respect to the impacting non-point source factors including engineering agreements, grant amendment requests, and budget period extension requests; reviewing and coordinating work products of

Land Treatment and other staff to ensure consistent development of the non-point source ground water component of the PCA Water Quality Division comprehensive ground water monitoring programs; reviewing and coordinating the development of ground water protection plans for non-point source pilot projects; and ensuring compatibility with the development of the overall ground water protection strategy.

Develops a program involving water resource management, ground water protection, and water quality monitoring associated with the impact of active, inactive, or abandoned waste sites on public and private water supplies in order to ensure protection of public health, provision of sanitary water supplies, and protection of ground water from contamination by reviewing state and local files and permits relative to the locations

and status of waste disposal sites in the seven county metropolitan area; evaluating the potential for contamination from inventoried waste sites; prioritizing monitoring requirements of waste sites based on potential for ground water contamination and public health impacts; establishing the monitoring network required to determine contamination potential from waste sites; coordinating with state and local government, and general public relative to program development; and developing a system for data storage, evaluation, and control.

Assists with Health Department's Environmental Review Program with emphasis on potential impact of solid and hazardous waste disposal on ground water quality, impact of construction projects on aquifers, and cases of environmental contamination which have affected or may potentially affect ground water in order to protect ground water quality and sources of public and private water supply in the state by following the progress of state solid and hazardous waste projects, providing technical input on potential ground water contamination; providing technical review and field support in cases of environmental contamination that threaten sources of public/private water supply; and assisting in the review of projects which may impact ground water quality in the state.

Provides technical assistance and information to Health Department field staff, water suppliers, engineering consultants, water well contractors, mineral explorers, monitoring well engineers, and the general public regarding water well, mineral exploratory boring, and monitoring well construction in order to promote and protect the public health as it relates to ground water use and protection by preparing informational literature concerning unit activities and policies, and communicating by conference, telephone or correspondence with appropriate constituency.

KNOWLEDGE, SKILLS AND ABILITIES REQUIRED

Knowledge of:

Principles of hydrology, hydraulics, and hydrogeology

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

State water law and rules.

Principles and practices of water resources management, ground water quality protection and water well construction.

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.

Provide direction in a leadwork capacity to less experienced employees.

Communicate effectively verbally and in writing.

Est.: 10/29/69
Rev.: 12/1/76
3/81
7/87

T.C.: 4/84
Former Title(s): Hydrologist Senior

	DNR	PCA	Health
Hydrologist 1	Area Hydrologist under close supervision of Regional Hydrologist. Central office staff Hydrologist assisting others/working under immediate supervision.	Central office staff assistant to other higher level staff--working on investigations, conducting field tests, drafting reports under close/immediate supervision.	Central office staff assistant performing work under immediate supervision similar to positions in DNR and PCA.
Hydrologist 2	Area Hydrologist performing full range of waters resource management administration activities under general supervision. Central office staff Hydrologist performing analysis and assisting higher level Hydrologists.	Site clean up staff Hydrologist assistance/consultation on smaller, less complex sites. Assists on clean up effort at larger, more complex sites.	Field Hydrologist covering a geographical area of the state working under general supervision.
Hydrologist 3	Central Office staff Hydrologist fully functioning under limited supervision in a Waters Program. Regarded as an agency "expert" in an area of specialization. May be leadworker including training other staff, assigning and reviewing work.	Site clean up staff Hydrologist consulting on the largest, most complex sites (i.e., complex geology, multiple aquifers, major population impacts, potential or known releases of hazardous substances). Has authority to negotiate settlements on behalf of PCA. May be leadworker including training other staff, assigning and reviewing work.	Field Hydrologist under limited supervision covers geographical area of state under limited supervision. Regarded as agency "expert" in an area of specialization. Provides some orientation/training of other Health Department staff in the area(s) of expertise.