

POSITION DESCRIPTION

Hydrogeologist – Advanced (Groundwater Specialist)

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POSITION SUMMARY:

The primary responsibility for this position is to serve as a statewide specialist responsible for management of groundwater and surface water monitoring programs to evaluate non-point impacts of agrichemicals. Key responsibilities will include design, planning, organization, coordination, and implementation of departmental and inter-agency annual groundwater and surface water monitoring programs and periodic statewide sampling surveys. The position will require data collection and analysis, review and evaluation of complex technical studies related to groundwater and surface water quality impacts from routine use of agrichemicals. As the program hydrogeologist, the position will also require review and development of statewide management strategies related to agrichemical use to protect groundwater and surface water, and to provide technical direction on the toxicological and environmental impacts related to the use of agrichemicals.

This position also conducts investigations at locations where agrichemical contamination of groundwater or surface water is found; install and sample monitoring wells, lead complex investigations to determine possible causes, assess local environmental conditions, coordinate and implement appropriate response actions, including regulatory or enforcement actions or remedial activities.

This position will develop and maintain collaborative relationships with state and federal agencies, and represent the department on various councils, committees, and associations, and serves as a liaison for the department between federal, state and local agencies to assist with development of statewide policy recommendations, administrative rules, and orders related to the management of groundwater and surface water resources. Work is performed under general supervision.

GOALS AND WORKER ACTIVITIES:

40% GOAL A: **Design, develop, and implement advanced level groundwater quality monitoring projects related to the use of agrichemicals throughout Wisconsin.**

- A.1. Coordinate and implement all aspects of the annual targeted sampling program for private wells.
- A.2. Design, develop, review and approve local and statewide monitoring projects including the necessary research methodology to assess regulatory needs. Coordinate and implement assigned projects and provide sampling and other support for staff responsible for other monitoring projects within the Environmental Quality Unit.
- A.3. Assist the design and oversight of the installation of groundwater monitoring networks.
- A.4. Schedule and direct the collection of groundwater samples by staff. Participate in sample collection and other field data like weather conditions, water level data, well condition and other information about surrounding agrichemical uses, tillage

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and other agricultural practices occurring near monitoring sites in accordance with established protocols.

- A.5 Assist in obtaining funding to initiate and continue groundwater monitoring.
- A.6 Monitor and assist in the management of department projects conducted in collaboration with, or by, personnel outside the department.
- A.7 Interpret the results of groundwater monitoring projects, prepare detailed technical reports and advise the department on regulatory implications.
- A.8 Communicate analytical results with well owners, including the need for any drinking water advisories for agrichemicals exceeding ch. NR 140 Enforcement Standards.

10% GOAL B: **Advanced technical direction and assistance to department staff for the purpose of recognizing known and emerging issues related to agrichemicals and their potential to impact groundwater and the environment, and to recommend, develop and implement management strategies and regulatory responses for the protection of groundwater.**

- B.1 Develop, coordinate and assist the assignment, preparation and tracking of special orders related to pesticides and groundwater protection, including existing orders involving isoxaflutole, simazine, and atrazine.
- B.2. Provide technical direction and assistance to department staff in the review and issuance of pesticide registrations and special registrations.
- B.3 Review technical information and draft Environmental Assessments and Environmental Impact Statements.
- B.4 Develop, coordinate, and assist department activities related to understanding and recognizing relationships between agrichemical chemistries and environmental fate, and between various environmental factors and the susceptibility of a site to groundwater contamination.
- B.5 Develop, coordinate and assist department activities related to the evaluation or interpretation of soil science and hydrogeologic data.
- B.6 Develop and evaluate various strategies to protect groundwater from agrichemical contamination.
- B.7 Review research data for pesticides for which DATCP has no information.
- B.8 Analyze predictive models on the movement of pesticides to groundwater.
- B.9 Coordinate the development of pesticide use surveys and interpret results.

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15% GOAL C: Design, develop and implement advanced water quality monitoring projects to evaluate the occurrence of agrichemicals in surface water across Wisconsin.

- C.1 Coordinate and implement the Unit's annual surface water sampling efforts in collaboration with DNR and DATCP Bureau of Laboratory Services (BLS) to ensure that sample collection, shipping and laboratory protocols are met.
- C.2 Evaluate data and provide annual reporting to US EPA on observed pesticide of interest.
- C.3 Evaluate the effectiveness of statewide management strategies used to minimize agrichemical contamination of groundwater/surface water.
- C.4 Develop statewide and site-specific regulations and/or special orders on pesticide use to protect surface water and groundwater quality.
- C.5 Oversee and coordinate amendments to ATCP chapters that affect surface water and groundwater quality.
- C.6 Develop and implement technical criteria or program procedures for use by external parties.
- C.7 Consult with US EPA and DNR in development of statewide program policies to address surface water issues.
- C.8 Develop, deliver, and coordinate regulatory or policy training for internal staff and external program participants.

15% GOAL D: Development and implementation of the exchange of research information, and regulatory strategies related to agrichemical use and agrichemicals in groundwater at the local, state, and federal levels.

- D.1 Coordinate and implement the department's pesticide research grant program in cooperation with the UW and DNR through the Joint Solicitation of research proposals.
- D.2 Analyze and disseminate data collected during department research projects. Draft technical reports related to research activities as needed.
- D.3 Communicate results of monitoring projects and any proposed regulatory outcomes with various interested government and non-governmental entities (i.e. DNR, EPA, USGS, WGNHS, DHS, County Health Departments, University, registrants, agricultural and grower groups).
- D.4 Coordinate committees to advise on research and policy formation. Represent the department on appropriate groundwater councils, committees and associations.

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- D.5 Evaluate data collected by state, federal, academic and industry researchers to determine their value and applicability to department groundwater activities.
- D.6 Assist in the development of educational, program outreach or training materials for agrichemical users and the general public related to agrichemical and groundwater issues.
- D.7 Provide close communication, consultation and assistance to the Bureau of Laboratory Services (BLS) regarding new pesticide products and analytical testing needs for new pesticides.

10% GOAL E: Investigation of sites where agrichemicals have been detected in groundwater to identify potential causes, assess local environmental conditions, and provide technical assistance to other Bureau sections.

- E.1 Provide technical assistance for Bureau investigations at sites where pesticides have been found in groundwater to identify potential sources.
- E.2 Assist in field investigation of groundwater contamination including environmental sampling and collection of other evidence related to possible rule violations.
- E.3 Update database and GIS applications to reflect investigative findings and provide appropriate information for other case tracking systems.
- E.4 Develop and implement policies and procedures for groundwater investigations and management strategies taken in response for the protection of groundwater.
- E.5 Prepare special orders in response to groundwater contamination.
- E.6 Develop substance specific rules for pesticides with other members of the Environmental Quality Unit.
- E.7 Prepare for and represent the department at public hearings when necessary.

10% GOAL F: Provision of assistance to the Unit, Section, Bureau, and Division as necessary.

- F.1 Assist the Environmental Quality Unit Supervisor, Section Managers (Agrichemical Programs, and Compliance and Investigation), Agrichemical Management Bureau Director, or Division Administrator as directed.
- F.2 Assist other Unit staff in maintaining the groundwater database and GIS tracking systems related to pesticides and nitrates.
- F.3 Prepare program reports or technical analyses as requested for management analysis. Provide recommendations on the best courses of action.
- F.4 Other duties as assigned.

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KNOWLEDGE AND SKILLS REQUIRED BY THIS POSITION:

- A. Comprehensive knowledge of the degradation and movement of pesticides and fertilizers in the environment, including the hydrogeologic factors affecting subsurface migration of these chemicals to groundwater.
- B. Comprehensive knowledge of soil chemistry, analytical procedures, and pesticides.
- C. Extensive knowledge of research methods related to the analysis of environmental systems. This includes knowledge of sampling surveys and ability to effectively produce relevant data reports.
- D. Extensive knowledge of groundwater monitoring systems including study design, site characterization, monitoring well installation, sampling, and data analysis including data management and presentation through the use of databases or geospatial information systems.
- E. Comprehensive knowledge of the laws, codes and regulations pertaining to pesticides and groundwater protection.
- F. Effective oral and written communication skills, including knowledge and application of risk communication principals.
- G. Working knowledge of pesticide and fertilizer substances and other chemicals used in agricultural crop production and the common use practices of commercial and private applicators.
- H. Ability to design and/or manage projects, applying project management methodologies and providing regular status reports on assigned projects (e.g., progress, next steps, changes needed or timeline adjustments, etc.).
- I. Skill and ability to serve as a program liaison, effectively building relationships and conveying program information in a format readily understood by various groups, partners, etc.

SPECIAL REQUIREMENTS:

A valid WI driver's license or the ability to provide one's own transportation for work purposes is required. Routine travel is required for work assignments (meetings, sample collection, etc.) and may include occasional overnight stays. Must be able to carry and use field equipment and traverse areas on farms and other sites where no special access provisions are available.

PHYSICAL DEMANDS:

The physical demands require good mobility including ability to access buildings and terrain for sampling drinking water and monitoring wells. Must be able to carry and use field equipment and traverse areas on farms and other sites where no special access provisions are available. Such mobility is however limited to the time spent in the field collecting samples, training new staff or

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assisting staff with special projects or investigations. These activities must be performed with care to avoid exposure to pesticide contaminants and other hazards that may be present.

Physical stamina to work under stressful conditions is required.

WORKING ENVIRONMENT:

Much of the work is performed in an office. Travel is required since the work requires sample collection to support investigation or inspection programs and water quality studies. Examples include: private well sampling surveys; groundwater or soil contamination investigations; pesticide use area inspections; and pesticide monitoring site review and evaluation.

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