

## STATE OF SOUTH DAKOTA CLASS SPECIFICATION

**Class Title: Natural Resources Engineering Specialist**

**Class Code: 40873**

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### **A. Purpose:**

Manages a statewide natural resources engineering program by developing engineering guidelines; recommending administrative rules, policies, and procedures, and documentation and reporting requirements; developing and presenting public information and education; providing technical assistance and direction to participants and staff; and monitoring and recording program implementation to ensure public health and safety, preservation of natural resources, and compliance with environmental laws and engineering standards.

### **B. Distinguishing Feature:**

Natural Resources Engineering Specialists manage an assigned statewide engineering program and provide technical expertise in the specialty to other engineers and staff.

Natural Resources Project Engineers are assigned complete projects or portions of projects and work under general supervision.

Natural Resources Engineering Directors are staff engineers for a division; or team leaders over other professional positions and manage a statewide engineering program comprised of multiple related programs individually managed by other professionals.

### **C. Functions:**

*(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)*

1. Interprets federal and state regulations pertinent to the program to ensure compliance in implementation.
  - a. Develops implementation methodologies.
  - b. Develops and disseminates information.
  - c. Drafts administrative rules, policies, and procedures.
  - d. Determines record-keeping and reporting requirements and develops documentation forms and guidelines.
2. Provides technical advice to local governments, consultants, industries, and the general public to inform them of regulatory requirements, assist them to participate in the program, and assist them to achieve compliance.
  - a. Attends city and county planning and zoning meetings to answer technical questions and assist in developing natural resources projects.
  - b. Provides technical direction to engineering consultants.
  - c. Prepares and presents information at public meetings.
  - d. Performs engineering, financial, and managerial assessments of existing facilities and systems to determine levels of compliance.
  - e. Determines eligibility for grants and loans.
  - f. Develops and recommends methods for reducing noncompliance.
3. Reviews plans and specifications, environmental assessments and management plans, operation and maintenance manuals, construction activities, and engineering consultant agreements and reports to ensure compliance with program requirements.
  - a. Compares consultant designs to regulatory requirements to ensure designs meet minimum requirements, and ensures that construction plans meet design criteria and grant requirements if applicable.

- b. Reviews and recommends changes in environmental assessments and management plans.
    - i. Investigates complaints of violations.
    - ii. Recommends remedies.
  - c. Recommends corrective actions to bring plans and specifications into compliance.
  - d. Recommends approval.
  - e. Provides technical assistance to other engineers reviewing plans and specifications.
  - f. Conducts inspections of construction projects and writes reports of findings to facility owners and consultants.
  - g. Reviews and recommends approval of final engineering reports.
4. Oversees the development, implementation, and enforcement of permits to ensure minimal environmental hazards to public health and safety and preservation of natural resources.
- a. Writes and reviews statements of basis.
  - b. Calculates and authorizes discharge and effluent levels.
  - c. Provides assistance to facilities in developing sampling plans.
    - i. Reviews laboratory methods and procedures to validate sampling results.
    - ii. Reviews sampling analyses for violations of standards.
  - d. Inspects and evaluates facilities to determine compliance with permit requirements and documents results.
    - i. Develops criteria to be used during field investigations.
    - ii. Conducts investigations and reviews work and reports of other engineers.
  - e. Develops natural resources management plans to regulate and control the use of natural resources.
  - f. Conducts engineering evaluations of permit applications and recommends approval or disapproval.
  - g. Plans strategies to correct noncompliance with permits.
  - h. Simulates consequences via computer modeling.
  - i. Prepares notices of violation, calculates penalties, and prepares compliance agreements.
5. Provides administrative support regarding assigned program by preparing reports and evaluations to provide managers and applicable federal agencies with information and statistics.
6. Performs other work as assigned.

**D. Reporting Relationships:**

Reports to a Natural Resources Administrator. Does not supervise.

**E. Challenges and Problems:**

Challenged to have the comprehensive scope of technical knowledge that is needed to address environmental situations that may occur in any combination of complexities. Further challenged to convey information and education based on technical and engineering concepts to regulated parties and the general public in a manner they can understand, in a typically adverse environment. Another challenge is determining appropriate engineering criteria that provides adequate protection for natural resources and public health, complies with state and federal requirements, and is obtainable and economical to achieve.

Problems include dealing with hostile people to resolve non-compliance issues, and keeping current with new regulations and assessing the impact on the program and its participants.

**F. Decision-making Authority:**

Decisions include approval of engineering agreements; whether or not a facility or operation is in compliance with state regulations; permit components, limits, and other requirements; whether or not enforcement action is necessary; which corrective actions are necessary to bring a facility into compliance or to remediate environmental damage; making viable on-the-spot responses at local hearings concerning program requirements; how to present regulatory information and technical requirements at informational meetings; the most effective response or recommendation to managerial requests; recommendations for approval of plans and specifications; and recommendations for changes in rules, policies, and procedures.

Decisions referred include final approval of enforcement actions; plans and specifications; new and changes to rules, policies, and procedures; loans; site closures; and atypical operations and designs.

#### **G. Contact with Others:**

Daily contact with program participants to provide guidance with program regulations, answer questions, explain acceptable alternatives, and monitor compliance; with the general public to answer questions concerning current and future regulations, natural resources problems and health effects, and general interpretation of program purpose; with environmental consultants to provide technical assistance with plans and specifications and remedial requirements; and with other department programs for cooperative efforts; weekly contact with Environmental Protection Agency (EPA) program managers to receive interpretation of federal regulations and guidance in program development; with other state agencies to exchange information on environmental concerns from all points of view; with local governments to answer questions about regulatory requirements and pending permit applications; and monthly contact with peers in other states to discuss interpretation and repercussions of existing and new federal regulations, frequent problem areas and mitigation techniques, and new technological applications and scientific approaches.

#### **H. Working Conditions:**

Portions of work are accomplished in an office environment; during field and construction inspections, incumbents may be exposed to hazardous materials, pathogenic bacteria, toxic fumes, open excavations, construction equipment, and extreme weather conditions; and they may be required to climb structures and work in confined spaces.

#### **I. Knowledge, Skills, and Abilities:**

Knowledge of:

- state and federal laws and regulations relating to water quality, air quality, solid waste management, or hazardous materials;
- department rules, policies, and procedures;
- organizational development and implementation;
- principles and techniques of effective public relations and external communications;
- engineering principles and practices as applied to pollution control;
- chemical, physical, and biological characteristics of pollutants.

Ability to:

- conceptualize change and initiate appropriate activities to move from concepts to implementation;
- identify and define problems and place them in proper order;

- make appropriate decisions by applying standards and available information to specific situations;
- develop new programs or change existing programs to meet changing trends, needs, and values;
- develop program policies and standard actions for specific situations;
- develop procedures and determine the logical flow of work;
- favorably present and promote departmental priorities, services, and actions internally and externally.