1315,Hydrologist,GS-11

PD Tracking Number 0000056

Major Duties
The incumbent of this position is a hydrologist with responsibility for participating on hydrologic studies of considerable scope and complexity, or serving as a Project Chief for studies that are more conventional or limited in nature. Project activity typically involves { }.

Serves as a Project Chief or senior project member for complete hydrologic investigations by planning, conducting, and reporting on interpretive studies that typically require modification of established techniques or procedures and extensive collection, interpretation, analysis, and evaluation of hydrologic data.

Develops approaches, standards, methods, guides, and procedures for conducting the interpretive study and provides advice, interpretation, and training to other professionals in the application or modification of established standards, methods, and procedures to ensure adequate treatment and thorough consideration of anomalous study conditions or situations.

Coordinates immediate and long-range study objectives and plans, and the scheduling and establishment of priorities to ensure that they do not conflict with the overall water resources management program.

Discusses agreements, study methods, approach, techniques, and desired results with management and representatives of cooperative agencies to implement hydrologic studies. Reconciles differences in approach or scope of study objectives in order to develop a comprehensive and scientifically sound report that can be used for comprehensive water resource management decision-making.

Maintains a high level of competence in his/her discipline specialty, a working competence in other technical disciplines, and an awareness of new technological developments in hydrology; develops methods for applying techniques and modifying such, as required, in the study of local hydrologic or related water resource problems and demonstrates or utilizes new or modified techniques in the comprehensive study of water resources for specific geographic areas of investigation.

Prepares reports of findings for complete hydrologic interpretive studies summarizing the results of hydrologic investigations and technically reviews parts of reports prepared by project team members.

Develops project proposals or descriptions that summarize critical information relating to the objective, approach, funding, and expected results of proposed investigations, and defends recommendations for initiation of new projects to higher level management.

Maintains liaison with employees of Federal and State Governments, local officials, and private

organizations who are affected by, or otherwise have a shared interest in, water resource management practices and problems in the regional area; provides technical advice and information on water resource problems of mutual concern.

Operates a motor vehicle as an incidental driver.

Factor Statements

FACTOR 1 - KNOWLEDGE REQUIRED BY THE POSITION (Level 1-7, 1250 points)

- Knowledge of water management practices and procedures as well as broad and varied hydrologic study techniques sufficient to analyze and interpret hydrologic data and information, to analyze the existence and feasibility of water resource management alternatives, and to prepare data and interpretive findings in support of study conclusions for publication.
- Familiarity with related fields such as hydraulics, engineering, geology, geochemistry, biology, and soil sciences sufficient to incorporate considerations from these disciplines in the review and study of water management problems, plans, and activities.
- Knowledge of administrative procedures sufficient to develop work plans and budgetary requirements for the personnel, equipment, and material necessary to implement project plans.
- Knowledge of USGS and WRD publication requirements and skill in the preparation of reports which clearly present scientific findings, interpretations, conclusions, and recommendations.

FACTOR 2 - Supervisory Controls (Level 2-4, 450 points)

The supervisor sets the overall objectives and program emphasis and works with the employee in developing project priorities. The hydrologist is responsible for independently planning own work, coordinating this work with other hydrologists or resource specialists, resolving technical problems, deciding on the necessity for and kind of technical compromise required by particular financial, manpower, or instrumentation constraints, and finalizing all assignments. The hydrologist keeps the supervisor informed of possible adverse reactions, publicity, or cooperator interest that might arise from study findings or conclusions. The individual's analysis, recommendations, and conclusions are relied upon as being technically correct. Completed work is reviewed for adherence to overall program policies and attainment of study objectives and deadlines.

FACTOR 3 - GUIDELINES (Level 3-3, 275 points)

The guidelines are primarily Water Resources Division policies, operating program guidelines, and scientific reference literature. Precedent studies often provide procedural guides or methodology, but studies typically require development of a "tailor-made" approach, due to differences in study objectives, the geology or hydrology of a given study area, the depth of investigation, or the techniques available for data collection or model simulation of the hydrologic system. The hydrologist independently adapts or extends the guidelines or chooses from among alternative study procedures in attempting to achieve optimum information on which to base hydrologic interpretations. The individual uses judgment and ingenuity in developing and implementing project plans as well as directing and overseeing project investigations.

FACTOR 4 - COMPLEXITY (Level 4-4, 225 points)

Assignments involve the development of techniques, methods, and procedures for the study of local or regional hydrologic conditions. The work is complicated by interrelated factors which must be considered simultaneously, such as: (1) multi-disciplinary aspects of a study; (2) the varied nature of surface-water velocities, ground-water flow direction, storage capacity, flow boundaries,

recharge characteristics, and water chemistry; 3) complex aspects of model calibration when used as a predictive study tool; (4) varied surface and subsurface geology; (5) varied land use conditions such as spatial and temporal variation in urbanization and non-uniform water supply development practices.

The work requires the hydrologist to isolate specific variables to be considered in the study in order to describe conditions impinging on the storage, movement, and use of ground- and surface-water within varied surficial and subsurface geologic environments, to evaluate natural and man-induced water quality conditions in hydrologic systems; and to draw scientifically correct conclusions from the evaluation of collected data. The hydrologist must be versatile and innovative in approach and be able to adopt or extend established techniques or methods to overcome existing study problems.

FACTOR 5 - SCOPE AND EFFECT (Level 5-3, 150 points)
The purpose of the work is to investigate and analyze any of a variety of hydrologic problems and to provide or recommend alternatives for water resources planning, management, and decision-making. Results of the work can potentially affect the quantity or quality of water available for use in local areas and the socio-economic well-being of dependent communities and industries. Study procedures, techniques, or results may also serve as a basis for similar hydrologic assignments or studies carried out by other hydrologists.

FACTOR 6 - PERSONAL CONTACTS (Level 6-3, 60 points)
Establishes and maintains contact with a technical staff of cooperators; scientists and community planners in other Federal, state, or local agencies; as well as hydrologists and support personnel in the immediate organization. Contacts are also made with consultant hydrologists and engineers as well as landowners, the general public, and contract personnel.

FACTOR 7 - PURPOSE OF CONTACTS (Level 7-2, 50 points)
Contacts are for the purpose of coordinating operational aspects of cooperative projects and study methods; to exchange information and resolve operational problems; to determine the applicability of state-of-the-art technology and existing study techniques to current project assignments; to develop new ideas and interpret methods and procedures; to reconcile conflicting viewpoints; to obtain information from cooperating agencies or other sources as required; and to provide advice and expertise in hydrologic principles for the solution of problems. Contacts are also to gain acceptance for use of different study techniques and methodologies; persuade reluctant landowners to provide access to study areas; and to provide information to individuals and organizations interested in the study findings, conclusions, and recommendations.

FACTOR 8 - PHYSICAL DEMANDS (Level 8-2, 20 points)
The work requires frequent physical exertion while conducting field portions of project work and with inspection of ongoing operations, including walking over rough, rocky, or uneven terrain; lifting and carrying equipment and supplies; and wading in streams in all types of weather.

FACTOR 9 - WORK ENVIRONMENT (Level 9-2, 20 points)
The work involves some degree of risk when conducting on-the-ground assessment of operations as well as exposure to moderate discomfort from such extremes as heat, cold, and inclement weather.

TOTAL POINTS - 2500
GRADE CONVERSION - GS-11
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