

1316,Hydrologic Technician,GS-08

Based on PD Tracking Number 0002018

PD Tracking Number 0005101

Major Duties

GS-1316-08 (Standard PD)

Major Duties

Surface Water: Performs a wide variety of stage and discharge measurements using appropriate techniques, equipment and protocols. Resolves varied hydrologic problems in performing complex discharge measurements at all stages. Observes and makes detailed notes of various hydraulic or environmental conditions which may have a bearing on discharge. Computes, checks, and reviews surface-water records from field data where hydrologic conditions are varied. Develops and reviews stage-discharge, velocity index curves and/or other complex ratings such as those used at culverts, gates, pumps, etc. Writes clear and understandable analyses describing the procedure used to compute records. Performs statistical and/or technical analyses of hydrologic data collected in the field. Prepares material for publication, including maps, tables and other illustrative material. Prepares plots, drafts, or sketches from surveying notes. Performs general office review and/or district quality-assurance review for complex surface-water records checking methods and accuracy of computation, plotting and analyzing differences in hydrographs and making necessary changes to correct inconsistencies in data. Assures accuracy, uniformity, and compliance with technical standards. Trains technical staff on accepted data collection and analysis methods.

Ground Water: Performs wide variety of water-level and discharge measurements from wells and springs selecting appropriate techniques, equipment and protocols. Observes and notes various hydraulic or environmental factors and conditions. Computes, checks, and reviews varied ground-water records. Tasks involve analyzing possible courses of action, techniques and procedures. Performs statistical and/or technical analyses of hydrologic data collected in the field. Prepares material for publication such as maps, tables, and other illustrative material. Conducts quality-assurance review of ground-water records to assure accuracy, uniformity, and compliance with technical standards. Instructs technical staff regarding accepted data collection and analysis methods. Documents procedures used to compute records. Operates and records findings from well logging instrumentation. Plans and conducts aquifer tests. Computes and analyzes data for interpretation and review. Collects, compiles and reviews pertinent well location and characteristic data.

Water Quality: Performs field measurements such as water temperature, specific conductance, pH, dissolved oxygen and alkalinity. Collects, processes, and prepares for lab analysis, a wide variety of samples using the most appropriate technique and protocol depending upon field conditions. Computes, checks, and reviews various water-quality monitoring records. Performs and reviews statistical and/or technical analysis of the hydrologic data collected. Prepares summaries and basic data reports of results of field activities, including the preparation of materials for publication, such as tables of data, map, and other illustrative material. Documents

procedures used to compute records. Applying seasoned judgment, conducts quality-assurance review of water-quality records and data summaries to ensure accuracy, uniformity, and compliance with technical standards. Instructs technical personnel regarding field and laboratory methods and procedures.

Sediment: Collects representative samples and processes varied suspended sediment, bedload and bed material samples. Computes, checks and reviews varied measurements for analyses and computation. Utilizes transport curves and other methods to estimate when sample data are lacking. Performs and reviews statistical and/or technical analysis of the hydrologic data collected. Enters sediment data into the water-quality and/or daily-values file using automated systems. Assembles and prepares data for tabulation and subsequent publication. Writes analysis describing the procedure used to compute records. Uses sediment computation programs to process varied sediment load data. Applies quality-assurance techniques and makes corrections based on review of the sediment data.

Instrumentation: Installs, maintains, services, and assists in the configuration of a variety of sensing, recording, and communications equipment and instrumentation. Troubleshoots a variety of hydrologic instrumentation in the office. Maintains a detailed inventory of hydrologic instrumentation. Maintains detailed repair logs on hydrologic instrumentation. Calibrates meters and analytical equipment. Determines appropriate equipment for field or laboratory activities depending upon data collection needs and field conditions.

Infrastructure: Leads a team in the simple construction of a variety of gages and supporting structures. Identifies and procures materials for construction and repair jobs. Schedules and/or obtains appropriate vehicles, equipment, and supplies. Performs safety inspection of equipment and work area.

Datums/Altitude/Elevation: Leads a team in routine surveys to establish vertical and horizontal datums using appropriate survey and geo-stationary reference techniques. Flags high-water marks and documents their reliability. Measures and records crest-stage gage high-water marks. Determines cross-sections for indirect measurements of flow and/or area ratings.

Operates a government motor vehicle as an incidental driver.

FACTOR STATEMENTS

FACTOR 1 - KNOWLEDGE REQUIRED BY THE POSITION (Level 1-5, 750 points)

- Extensive practical knowledge of hydrologic principles and programs. The ability to sequentially plan assignments applying a wide range of standard and non-routine hydrologic field and office procedures in order to collect, compile, compute, and analyze hydrologic data. Ability to modify procedures and identify alternative methods in order to obtain and interpret accurate results.
- Ability to compile, customize, and make routine and non-routine interpretations of hydrologic data. Data compilation and computation activities include, but are not limited to, applying datum corrections, plotting and analyzing hydrographs, transferring data to maps and reconstructing inconsistent or missing records.
- Knowledge of and ability to follow field and laboratory safety procedures.
- Knowledge of one or more computer systems and databases in order to enter, retrieve, and manipulate a wide variety of hydrologic data; to perform basic database administration; to operate computerized instrumentation; to generate a variety of reports; and, to respond to a wide range of

hydrologic data requests. Knowledge of web programming and maintenance to display hydrologic data.

- Practical knowledge of electronic technology, equipment mechanics, and programming to the extent necessary to plan, select or develop approaches to technical problems, in addition to installing, operating and maintaining a variety of electronic equipment and a wide range of hydrologic data-measuring instrumentation.

FACTOR 2 - SUPERVISORY CONTROLS (Level 2-3, 275 points)

Works under the general direction of the supervisor or a higher graded employee. Assignments involving prescribed or standard methods are given in terms of objectives to be achieved. The employee uses initiative to independently accomplish such assignments with the supervisor providing assistance in solving unfamiliar technical problems. Methods applied by the technician in performing tasks are not normally reviewed. Completed work is reviewed for accuracy and technical adequacy.

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

Guidelines include a series of manuals on techniques of water resources investigations (TWRI), WRD Data Reports Preparation Guide, agency procedural directives, oral instructions, standard accepted recording forms, protocols and previously established methods. The employee locates and selects the appropriate guideline or procedure; however, the guidelines may not be completely applicable to the assignment or contain gaps in specificity. The employee independently resolves technical problems by deviating from or adapting guides. The technician formulates and recommends revised approaches and procedures. Situations involving significant deviation from established guidelines are generally discussed with the supervisor for additional guidance.

FACTOR 4 - COMPLEXITY (Level 4-3, 150 points)

Work consists of the full range of data collection and computation duties that typically involve the application of differing and unrelated technical approaches and procedures to complete an assignment. The work requires the employee to consider and select from several possible courses of action, methods, and techniques. The technician displays initiative, resourcefulness, and judgment to adjust work methods and procedures to accommodate unusual conditions found at the worksite and to identify and resolve anomalies or inconsistencies in data.

FACTOR 5 - SCOPE AND EFFECT (Level 5-3, 150 points)

The purpose of the work is to perform conventional assignments involving the collection, computation and compilation of hydrologic data that affect the understanding of the hydrologic environment and to disseminate hydrologic data through reports and other mediums. Work efforts have an impact on the accuracy and adequacy of field, office and/or laboratory processes and methods used, the data and resulting reports, and/or data-resource management decisions.

FACTOR 6 - PERSONAL CONTACTS (Level 6-2, 25 points)

Primary contacts are with personnel within the District. On occasion, contacts may be made with personnel from higher level organizations, State or local governments, or other Federal agencies. Contacts with the general public occur during the performance of routine field or office activities.

FACTOR 7 - PURPOSE OF CONTACTS (Level 7-2, 50 points)

Contacts are chiefly to clarify or exchange information, provide advice, plan or coordinate work

activities, resolve technical problems, and provide technical assistance or training.

FACTOR 8 - PHYSICAL DEMANDS

(Level 8-2, 20 points)

{ } The work requires some physical exertion such as:

long periods of standing;

walking over rough, uneven, or rocky surfaces;

recurring bending, crouching, stooping, stretching, reaching, or similar activity; or

recurring lifting of moderately heavy items weighing less than 23 kilograms (under 50 pounds)

such as lifting and carrying stream gauging weights, data collection and monitoring devices, or sample trays.

Or

(Level 8-3, 50 points)

{ } The work regularly requires considerable dexterity, agility, and strenuous physical exertion such as that needed to:

climb, or work from, tall ladders or scaffolding;

work in areas where footing is treacherous such as on slippery river banks, in steep or rocky terrain, and in fast-moving water;

lift heavy objects weighing 23 kilograms (over 50 pounds) or more;

crouch or crawl in constricted areas; and

defend oneself or others against physical attack.

FACTOR 9 - WORK ENVIRONMENT (Level 9-2, 20 points)

The work regularly involves moderate risks or discomforts associated with visiting field sites with limited access, under adverse weather or flooding conditions, or exposure to irritant or toxic chemicals. Work may require the use of special clothing or gear such as masks, coats, boots, goggles, respirators, or life jackets.

TOTAL POINTS: 1715

GRADE CONVERSION: GS-8

GS-1300T, JFS for Technical Work in the Physical Sciences Group 08/02

Source Document STD PD S0267

Rev 8/2004