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Geodesist 11

GS-1372-11

NOTE: THE SENTENCE IN PART I DESCRIBING THE PURPOSE OF THE POSITION AND PARTS II AND III IN THEIR ENTIRETY ARE PERMANENT PARTS OF THE LIBRARY AND MAY NOT BE CHANGED OR EDITED IN ANY WAY.

I. INTRODUCTION

This position serves as a geodesist, involved in observing, reducing, adjusting, and analyzing geodetic survey data to produce latitudes and longitudes; and orthometric, geoidal, and ellipsoidal heights.

II. MAJOR DUTIES AND RESPONSIBILITIES

Constructs or develops criteria for observing new geodetic surveys, and reducing or adjusting geodetic observations. Considers factors such as costs, geodetic requirements, alternatives, and recommendations.

Performs projects which are large and directs others in the performance of portions of these larger investigations, such as the mathematical processing of satellite survey data, including observations of the Global Positioning System (GPS) or radio astronomic data including observations of the Very Long Baseline Interferometry (VLBI) survey system, obtained by field procedures of highest precision, repeatability tests, constrained and minimally constrained, three-dimensional network adjustments, and employs graphical methods and repeatability tests to ascertain the consistency and quality of the data.

Prepares observation schedules, station lists, sketches of observing schemes, and compiles descriptive and positional information for field teams.

Analyzes, evaluates, coordinates, selects, and applies data to provide critical up-to-date information required. Interprets information from various source materials to ensure the most reliable data is selected for use on assigned projects. Processes and reduces field observations taking into account appropriate parameters such as instrument drift, timing biases, offset of antenna phase centers, and environmental effects; participates in special studies to optimize data reduction programs and procedures.

Recommends modifications to existing specifications and equipment and new methods, techniques, and materials to improve quality and effectiveness.

Manages and maintains computerized data base files containing satellite orbital coordinate data, field survey observations, and results for the adjusted and unadjusted positional and earth rotation data; uses the space geodesy data base files to recover data to meet specific requirements and to provide data and information in response to special requests from other scientists, engineers, and surveyors representing government agencies, private industry, and academic institutions.

III. FACTORS

1 - Knowledge Required by the Position. Knowledge of geodetic theories, concepts, principles, practices and equipment, including those used in satellite surveying with the Global Positioning System, optical astronomy, surveying, geography, mathematics, computer science or other techniques, sufficient to evaluate source material, research, analyze, select, and prepare geodetic materials.

A professional knowledge of geodetic specifications and standardized procedures to enable the employee to modify or develop existing or new specifications and standardized procedures; adapt techniques or equipment;

and improve the methods and procedures of field instructions, survey data collection, and evaluation of geodetic data.

Fundamental knowledge of computers including using FORTRAN and/or C programs, data base management concepts, personal computers, and remote computer terminals in order to analyze, adjust and store geodetic data.

2 - Supervisory Controls. Supervisor sets overall objectives and resources available. Employee and supervisor consult in developing projects, priorities, and deadlines. Employee independently plans own work, resolves most problems, and carries assignments through to completion. Matters which affect policy are referred to the supervisor. Completed work is reviewed for overall results in terms of feasibility with other work or effectiveness in meeting expected results.

3 - Guidelines. Guidelines are many and varied and include agency or local policies, precedent materials, standard instructions and techniques, and program directives; however they are not always applicable to the work or may be non-specific. Employee uses judgment in selecting, interpreting, and independently applying the guidelines and standard geodetic practices to new situations.

4 - Complexity. Assignments are varied, difficult, and complex, and require planning and execution of studies as well as interpreting the scientific significance of results. Judgment is applied in selecting and evaluating data and in deviating from precedents and guidelines. Projects involve a combination of complex duties that require different and unrelated processes and methods. Decisions concern work planning, refining techniques to be used and interpretation of considerable data.

5 - Scope and Effect. Work provides geodetic support of a variety of users' systems in all aspects of planning, budgeting, and managing of products and services. Employee treats various conventional problems and questions according to established criteria although there is often a need to deviate from these precedents. Work affects accuracy, reliability, and timeliness of projects and/or design of geodetic products, equipment, or operations.

6 - Personal Contacts. Contacts are with individuals or groups within and outside the organization. They include individuals from other government agencies, and from the private sector under contract or wanting to do business with the government. Contacts are in unstructured setting; the purpose and extent of each contact is different. Contacts are not established on a routine basis

7 - Purpose of Contacts. Contacts are established to plan and coordinate work, clarify issues on requirements for coordinate products, and advise on problems. Groups work toward mutual goals in a spirit of cooperation.

8 - Physical Demands. Work is primarily sedentary. There may be some walking, standing, bending; carrying light items (e.g. papers, small books). A valid driver's license may be required to drive an automobile in the performance of duties.

9 - Work Environment. Work is performed in a typical office setting. The work area is adequately lighted, heated, and ventilated.

IV. UNIQUE POSITION REQUIREMENTS

This position is exempt from coverage under the Fair Labor Standards Act.

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