

**Physical Science Technician  
GS-1311-07**

Standard Job #1311-07

**A. MAJOR DUTIES**

Typical, but not all-inclusive, duties are illustrated by performance of any combination of the following:

Actively participates in one or more phases of the research process by performing a variety of complex technical duties, in a laboratory environment, common to the assigned area of work, and contributes ideas towards the planning and sequencing of the technical aspects of the research.

Adapts, modifies or develops new techniques and/or procedures to satisfy the needs of the research project.

Uses a variety of specialized equipment to perform a full range of techniques.

Maintains, calibrates and modifies complex/specialized equipment and automated systems used for test and evaluation procedures.

Independently initiates action to resolve or correct technical difficulties and results, or recommends resolution to supervisor.

As directed, searches for literature pertinent to area of research for new procedures or techniques to use in the laboratory.

Collects, prepares, evaluates and verifies samples and supporting records. Maintains records and locates and compiles data and other information from various sources.

Keeps detailed records of experimental data. Tabulates, statistically analyzes and summarizes data using personal computers and software packages.

Maintains inventory of chemicals, stock solutions, etc., prepares solutions and reagents for use in the laboratory, and safely disposes of waste material (both chemical and biological).

Keeps work-site in a neat and orderly manner.

**B. EVALUATION FACTORS**

**1. KNOWLEDGE REQUIRED BY THE POSITION (FLD 1-5: 750 pts)**

Knowledge of and skill in applying the principles of physical science (e.g., chemistry, physics, etc.) of the research being conducted, and policies and programs to lay out, schedule, organize, and execute the details of either: (1) a wide variety of types of limited operational projects; and/or (2) one-at-a-time (and often long range) multi-phased projects, at least some of which have nonstandard technical problems that must be coordinated with others.

Practical knowledge of the basic theories and practices of the scientific discipline(s) supported.

Ability to adapt, develop or improve techniques and procedures.

Knowledge of the processes, methods, procedures and management practices necessary to perform a full range of complex duties in area of assignment.

Knowledge and understanding of the application of instrumentation used in analyses so that prescribed procedures can be modified to accommodate existing sampling and analytical conditions.

Skill to operate and maintain complex equipment systems common to the specific area of research which must be calibrated and synchronized to achieve desired results.

Ability to locate, organize and adapt information from published literature for use as guidelines for new procedures.

Skill in keeping exact and detailed records of data obtained from experiments.

Knowledge of the research project objectives sufficient to plan the technical aspects of experimental design and execution.

Skill to recognize results that are unexpected, unusual or erroneous and to independently initiate action to overcome technical difficulties or refer for professional resolution or interpretation.

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Skills to obtain, tabulate, statistically analyze, and summarize data by graphic or other means. Familiarity with electronic and microprocessor-based calculators and equipment, and with computerized data storage and manipulation. Skill in the use of personal computers and software packages in the data collection, analysis, and presentation processes.

Knowledge of safe laboratory procedures.

**2. SUPERVISORY CONTROLS (FLD 2-3: 275 pts)**

The supervisor or other designated authority initially provides direction on the priorities, objectives, and/or deadline for kinds of work previously performed by the unit and therefore covered by precedent. Assignments new to the organization or unusual assignments may be accompanied with a general background discussion, including advice on the location of reference material to use.

The technician identifies the work to be done to fulfill project requirements and objectives, plans and carries out the procedural and technical steps required, seeks assistance as needed, independently coordinates work efforts with outside parties, and characteristically submits only completed work. The technician seeks administrative direction or decision from higher authority on the course to follow when encountering significant technical or procedural problems with the work.

Review is usually in the form of an assessment as to how the technician resolved technical and related administrative problems encountered. Accuracy of the data produced, quality of observations made, and the sufficiency of steps employed in planning and executing the work assigned are customarily accepted without detailed review.

**3. GUIDELINES (FLD 3-2: 125 pts)**

Procedures for doing the work have been established and a number of specific guidelines are applicable.

Incumbent uses judgment in selecting the appropriate guideline because of the number, similarity, linkage, and overlapping nature of the guides. The guidelines contain criteria to solve the core question or problem contained in the assignments, though the applicability may not be readily apparent, i.e., the guides often require careful study and cross-referencing.

**4. COMPLEXITY (FLD 4-3: 150 pts)**

The work requires the performance of various technical duties which involve differing and unrelated processes and methods. A number of possible courses of action for planning and executing the work exist, and the incumbent is given leeway or otherwise exercises discretion in choosing from among them.

Judgment is required to apply a wide range of conventional, established approaches, methods, techniques and solutions to new situations. The technician: identifies and recommends resolution of discrepancies in data based on a study of how the data interrelate; adjusts work methods to accommodate unusual conditions; and/or recommends or determines what data to use, record or report.

**5. SCOPE AND EFFECT (FLD 5-3: 150 pts)**

The work involves applying conventional technical and administrative solutions and practices to a variety of problems. Incumbent is involved in almost all phases of the scientist's study, and has responsibility for selected phases or conducts test applications of scientific and technical theories when the methods, techniques, and procedures are clearly outlined.

Work products directly affect the design and execution of experiments or the adequacy of such activities as long range work plans, testing operations, or research conclusions.

**6. PERSONAL CONTACTS and (2b: 75 pts)**

**7. PURPOSE OF CONTACTS**

Personal contacts are with employees in the agency, inside and outside of the immediate organizations, e.g., personnel from higher level organizational units, or, occasionally, resource individuals from State or local government units, or other Federal agencies.

The purpose of personal contacts is to: plan and coordinate work efforts; discuss technical requirements of equipment with manufacturers and resolve problems concerning the work or the peculiar needs of the organization; interpret data obtained and explain its purpose and significance; or reach agreement on operating problems such as recurring submission of inaccurate, untimely, incomplete or irrelevant data. The persons contacted are usually working toward a common goal and generally are reasonably cooperative.

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**8. PHYSICAL DEMANDS (FLD 8-2: 20 pts)**

The work requires some physical exertions, such as regular and recurring running, walking, or bending. In many situations the duration of the activity (e.g., continuous testing of samples) contributes to the arduous nature of the job. In other situations, there may be special requirements for agility or dexterity such as exceptional hand/eye coordination.

**9. WORK ENVIRONMENT (FLD 9-2: 20 pts)**

The work requires moderate risks or discomforts which require special safety precautions, e.g., working around moving parts, machines, with irritant chemicals, bacteria, or obnoxious odors. The incumbent is required to use protective clothing or gear such as masks, gowns, goggles, gloves.

**C. OTHER CONSIDERATIONS (Check if applicable)**

- Supervisory Responsibilities (EEO Statement)
- Training Activities - Career Intern, Student Career Experience Program
- Motor Vehicle or Commercial Driver's License Required
- Pesticide Applicators License Required
- Safety/Radiological Safety Collateral Duties
- EEO Collateral Duties
- Drug Test Required
- Vaccine(s) Required
- Financial Disclosure Required
- Special Physical Requirements/Demands
- Other:

TOTAL POINTS: 1565 points  
(GS-7 Range: 1355-1600 points)