

Job Description

Job Title:	Tritium Technician
Department:	Earth and Environmental Sciences, Environmental Isotope Laboratory
Reports To:	Lab Manager and Senior Technologist
Jobs Reporting:	None
Salary Grade:	USG 6
Effective Date:	February 2018

Primary Purpose

The Tritium technician is responsible for the preparation and analysis of water and other samples for tritium content. The incumbent will be an integral part of the team to provide sample analyses results in a timely manner to clients from around the world. Duties assigned will include the set up and operation of laboratory analytical equipment, conduct data analysis and interaction with students, co-workers and clients.

Key Accountabilities

Analytical Responsibilities

- The preparation of water samples for tritium content by direct counting or by enrichment as outlined in TP 1.0.
- Determination of water sample conductivity as per TP 2.0.
- Sample pre-treatment by ion exchange or Azeotropic Distillation (TP 3.0).
- Final distillation of samples
- Preparation of sample with scintillation cocktail and placement into a Liquid Scintillation Counter (LSC) for measurement of their Tritium activity.
- Reduction of raw data from the LSC which are converted with an Excel workbook to final results.
- Reporting of results to the office administrator
- Responsible for housekeeping in the work area and proper removal of all chemical wastes involved in the above procedures while observing all University safety standards
- Helping to maintain the smooth operation of the EIL through providing assistance and knowledge to co-workers, post-docs, undergraduate and graduate students.
- Provide general repairs, routine maintenance, trouble-shooting, problem solving and manipulating data.

Supervision

- Oversee and direct undergrad and grad student casual lab help.

Required Qualifications

Education

- College diploma required in a science related field, Undergraduate degree preferred
- An equivalent combination of education and experience will be considered

Experience

- 1 year of experience in a general lab environment, experience working in an Isotope lab environment considered an asset
- Practical experience in general lab practices and safety

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- Experience working with tritium preparation and analysis, Conductivity and pH measurements, Liquid Scintillation Counter operation, and Radioactive sample handling and analysis preferred
- Familiar with Azeotropic Distillation and Ion exchange for water/plant/soil sample pre-treatment

Knowledge/Skills/Abilities

- A working knowledge of MS Word, MS Excel, Email and general PC use as well as other analytical techniques is required.
- Able to manage and prioritize 100's of samples at a time
- Strong analytical and problem solving skills
- Excellent verbal and written communication skills
- Intermediate MS Word and Excel

Nature and Scope

- **Contacts:** Must be able to work with a team to accomplish client analytical requirements in a timely manner. Communicates with other staff members and at times with clients to answer questions, provide feedback and obtain more information as required for samples analysis.
- **Level of Responsibility:** Helps and directs students as required. Provides training to visitors. Must pay attention to details while dealing with large quantities of samples and result.
- **Decision-Making Authority:** Organizes sample analyses based on analytical requirement and priorities as communicated by the lab manager to be as efficient as possible. The incumbent will follow a documented Technical Procedure for each method developed. Deviations from the written procedures must be discussed with the lab manager and noted on the lab traveler.
- **Physical and Sensory Demands:** Manual dexterity and strength are required to handle samples (open/close bottle closures), syringes, and small vials and vial cap sealers. Must be able to stand for long periods while performing routine sample preparation.
- **Working Environment:** The incumbent is required to work in a lab environment which is at times cool due to equipment requirements or hot due to sample analysis procedures and noisy. Safety issues – working with sharp needles and glass, requires the use of gloves and ability to work with an open flame, handling poisonous materials. Cleanliness - washing of glassware, must keep work areas free from contaminants.