

# Geological and Hydrologic Technicians

SOC: 19-4043 • Career Profile Report

## ■ Key Facts

**\$50,510**

Median Salary

**12,900**

Employment

**+1.0%**

Growth Rate

## ■ Requirements & Salary Range

**Education:** Associate's degree

## ■ Automation Risk Assessment

**Low Risk** - 8.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

## ■■ Work-Life Balance

**7.5/10** - Good work-life balance

## ■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	6.2/10	Investigative	9.4/10
Artistic	5.6/10	Social	6.4/10
Enterprising	4.8/10	Conventional	6.4/10

## ■ Top Skills Required

Analytical skills, Communication skills, Critical-thinking skills, Interpersonal skills, Physical stamina

### ✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

### ■ Challenges

- Burnout Risk
- Rapid Technological Change

## ■ What They Do

Geological and Hydrologic Technicians are applied science professionals who support geologists, hydrologists, and environmental scientists by collecting, analyzing, and managing **earth science and water-related data**. They work in the field and laboratory to monitor natural resources, study geological formations, and track water quality and availability. Their work provides the hands-on data that informs decisions about environmental protection, construction, resource management, and hazard mitigation.

This career is well suited for individuals who enjoy outdoor fieldwork, scientific measurement, and applying technical skills to understand Earth systems.

## What Do Geological and Hydrologic Technicians Do?

Geological and hydrologic technicians gather data and assist with research related to soil, rock, groundwater, and surface water. Their responsibilities combine field sampling, laboratory testing, and data documentation.

Common responsibilities include:

- Collecting soil, rock, sediment, and water samples
- Measuring stream flow, groundwater levels, and water quality
- Installing and maintaining monitoring equipment
- Conducting laboratory tests on geological or water samples
- Recording, organizing, and validating field data
- Assisting scientists with environmental studies and surveys
- Preparing maps, charts, and technical reports

## Types of Geological and Hydrologic Technicians

Technicians may specialize based on the type of data or environment they work with:

- Geological Technicians: Support studies of rocks, minerals, and earth formations.
- Hydrologic Technicians: Focus on surface water, groundwater, and water quality monitoring.
- Environmental Field Technicians: Assist with environmental impact and remediation projects.
- Mining and Resource Technicians: Support exploration and resource assessment efforts.
- Engineering Support Technicians: Collect subsurface and site data for construction projects.
- Water Resources Technicians: Monitor water supply, usage, and sustainability.

## Skills and Abilities Needed

These technicians combine scientific fundamentals with practical field skills.

### Core Technical Skills

### Personal Qualities That Matter

## Education and Training Pathway

Most geological and hydrologic technicians enter the field through technical or scientific education:

- Associate Degree: Commonly in geology, hydrology, environmental science, or a related field
- Bachelor's Degree (sometimes preferred): For advanced or specialized roles
- Field and Laboratory Training: Hands-on experience with sampling and equipment
- On-the-Job Training: Learning site-specific methods and safety procedures
- Continuing Education: Staying current with data collection technologies and regulations

## Where Do Geological and Hydrologic Technicians Work?

These technicians are employed across public and private sectors:

- Government Agencies and Environmental Departments

- Engineering and Environmental Consulting Firms
- Mining, Energy, and Resource Companies
- Water Utilities and Management Agencies
- Research Institutions and Laboratories
- Construction and Infrastructure Projects

Work often alternates between outdoor field sites and indoor laboratory or office settings.

## How Much Do Geological and Hydrologic Technicians Earn?

Earnings vary based on education, experience, and industry:

- Entry-Level Technicians: Typically earn professional technical wages while gaining field experience
- Experienced Technicians: Often earn higher pay with specialization or supervisory duties
- Technicians in Energy or Engineering Sectors: May earn more due to technical demands

Compensation depends on location, project type, and employer.

## Is This Career Difficult?

This career can be physically and technically demanding. Technicians may work in remote locations, adverse weather, or rugged terrain while maintaining precise data standards. The challenge lies in balancing field conditions with scientific accuracy and safety requirements.

## Who Should Consider This Career?

This occupation may be a strong fit if you:

- Enjoy hands-on scientific and fieldwork
- Are interested in geology, water, or environmental science
- Like collecting and analyzing real-world data
- Are comfortable with physical outdoor work
- Want a technical role that supports environmental and infrastructure decisions

## How to Prepare Early

- Take courses in earth science, environmental science, and biology
- Develop basic math and data recording skills
- Spend time outdoors building field awareness
- Learn basic mapping or GIS tools
- Seek internships or field assistant roles in environmental projects

**Geological and hydrologic technicians provide the critical field data that helps scientists understand Earth systems, manage water resources, and protect communities and environments.**