

# **CAREER GUIDE FOR ENVIRONMENTAL TECHNICIAN**

SOC Code: 19-4091

Pay Band(s): 4 ([Salary Structure](#))

**Standard Occupational Description:** Performs laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health. Under direction of an environmental scientist or specialist, may collect samples of gases, soil, water, and other materials for testing and take corrective actions as assigned.

**Environmental Technician positions in the Commonwealth are assigned to the following Roles in the [Environmental Services Career Group](#):**

## [Environmental Specialist I](#)

While Environmental Technician within the Commonwealth are all located within the Environmental Services Career Group, individuals may want to pursue other opportunities within the Commonwealth depending upon individual training, education, knowledge, skills, abilities, and interests.

Other Career Group(s) that may be of interest are:

[Engineering Technology](#)  
[Laboratory and Research Technicians and Specialists](#)  
[Public Safety Compliance](#)  
[Electronics](#)

## **SKILLS, KNOWLEDGE, ABILITIES AND TASKS**

(Technical and Functional Expertise)

### **Skills**

**Note:** *The technical and functional skills listed below are based on general occupational qualifications for Environmental Technician commonly recognized by most employers. Typically, you will not be required to have all of the skills listed to be a successful performer. Recruitment and selection standards for an individual state job must be based on the specific knowledge, skills, and abilities for that job as indicated in the job announcement and job description in the Employee Work Profile.*

1. Using scientific rules and methods to solve problems.
2. Using mathematics to solve problems.
3. Understanding written sentences and paragraphs in work related documents.
4. Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
5. Communicating effectively in writing as appropriate for the needs of the audience.
6. Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
7. Watching gauges, dials, or other indicators to make sure a machine is working properly.
8. Controlling operations of equipment or systems.
9. Considering the relative costs and benefits of potential actions to choose the most appropriate one.

## Knowledge

**Note:** The technical and functional knowledge statements listed below are based on general occupational qualifications for Environmental Technician commonly recognized by most employers. Typically, you will not be required to have all of the knowledge listed to be a successful performer. Recruitment and selection standards for an individual state job must be based on the specific knowledge, skills, and abilities for that job as indicated in the job announcement and job description in the Employee Work Profile.

The **Knowledge** of:

1. Chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.
2. Arithmetic, algebra, geometry, calculus, statistics, and their applications.
3. Structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
4. Relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.
5. Circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

## Abilities

**Note:** The technical and functional abilities listed below are based on general occupational qualifications for Environmental Technician commonly recognized by most employers. Typically, you will not be required to have all of the abilities listed to be a successful performer. Recruitment and selection standards for an individual state job must be based on the specific knowledge, skills, and abilities for that job as indicated in the job announcement and job description in the Employee Work Profile.

The **Ability** to:

1. Arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, and mathematical operations).
2. Read and understand information and ideas presented in writing.
3. Quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
4. Add, subtract, multiply, or divide quickly and correctly.
5. Communicate information and ideas in writing so others will understand.
6. See details at close range (within a few feet of the observer).
7. Choose the right mathematical methods or formulas to solve a problem.
8. Apply general rules to specific problems to produce answers that make sense.
9. Listen to and understand information and ideas presented through spoken words and sentences.
10. Identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.

## Tasks

**Note:** The following is a list of sample tasks typically performed by Environmental Technician. Employees in this occupation will not necessarily perform all of the tasks listed.

1. Calculate amount of pollutant in samples or compute air pollution or gas flow in industrial processes, using chemical and mathematical formulas.
2. Collect samples of gases, soils, water, industrial wastewater, and asbestos products to conduct tests on pollutant levels and identify sources of pollution.
3. Examine and analyze material for presence and concentration of contaminants such as asbestos, using variety of microscopes.

4. Initiate procedures to close down or fine establishments violating environmental and/or health regulations.
5. Inspect sanitary conditions at public facilities.
6. Inspect workplaces to ensure the absence of health and safety hazards such as high noise levels, radiation or potential lighting hazards.
7. Make recommendations to control or eliminate unsafe conditions at workplaces or public facilities.
8. Prepare samples or photomicrographs for testing and analysis.
9. Record test data and prepare reports, summaries, and charts that interpret test results.
10. Respond to and investigate hazardous conditions or spills, or outbreaks of disease or food poisoning, collecting samples for analysis.

## **INTERESTED?**

Like people, occupations have traits or characteristics. These characteristics give important clues about the nature of the work and work environment, and give you an opportunity to match your own personal interests to a specific occupation. When you choose a job in an occupation that matches your own interests you have taken an important step in planning a successful and rewarding career.

The occupation of Environmental Technician has **Investigative** and **Realistic** characteristics as described below:

**Investigative** — Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.

**Realistic** — Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.

## **LICENSURE, REGISTRATION, OR CERTIFICATION REQUIREMENTS**

Generally this is not required for Environmental Technician positions in state government.

The Certifying Organization for Environmental Technicians is the National Registry of Environmental Professionals. The web site is: <http://www.nrep.org/index.html>

Certification enhances professional growth and career progression.

## **EDUCATIONAL, TRAINING, AND LEARNING OPPORTUNITIES**

The Department of Labor provides the following information:

Environmental science and protection technicians perform laboratory and field tests to monitor environmental resources and determine the contaminants and sources of pollution. They may collect samples for testing or be involved in abating, controlling, or remediating sources of environmental pollutants. Some are responsible for waste management operations, control and management of hazardous materials inventory, or general activities involving regulatory compliance.

Many employers prefer applicants who have at least 2 years of specialized training or an associate degree in applied science or science-related technology.

Many technical and community colleges offer associate degrees in a specific technology or a more general education in science and mathematics. A number of 2-year associate degree programs are designed to provide easy transfer to a 4-year college or university, if desired. Technical institutes usually offer technician training, but provide less theory and general education than do technical or community colleges. The length of programs at technical institutes varies, although 1-year certificate programs and 2-year associate degree programs are common.

Technicians usually begin work as trainees in routine positions, under the direct supervision of a scientist or a more experienced technician. Job candidates whose training or educational background encompasses extensive hands-on experience with a variety of laboratory equipment, including computers and related equipment, usually require a short period of on-the-job training. As they gain experience, technicians take on more responsibility and carry out assignments under only general supervision, and some eventually become supervisors.

The State Council of Higher Education lists several Virginia community colleges that offer educational programs for those interested in the occupation of environmental technician. Web site is <http://research.schev.edu/degreeinventory/inventory>.

## **COMMONWEALTH COMPETENCIES**

Competencies are a set of identified behaviors, knowledge, skills, and abilities that directly and positively impact the success of employees and the organization. Competencies can be observed and measured. When consistently demonstrated, competencies make employees particularly effective in their work. Competencies help lay out a road map to career success. You can use the Commonwealth Competencies to help improve your individual performance by adopting behaviors that make high performing employees successful in their jobs. In this way, you can use the Commonwealth Competencies for your further professional development.

### **The Commonwealth Competencies are:**

1. Technical and Functional Expertise
2. Understanding the Business
3. Achieving Results
4. Serving the Customer
5. Teamwork
6. Interpersonal and Communication Skills
7. Leadership and Personal Effectiveness

The above competencies may be applied to employees throughout the Commonwealth of Virginia. They can be rank-ordered by agencies and hiring managers to represent the needs of a specific job. The rank ordering will change depending upon the occupation, an organization's priorities, the actual job requirements, and the supervisor's preferences.

Career success is both about what you do (applying your technical knowledge, skills, and ability) and how you do it (the consistent behaviors you demonstrate and choose to use) while interacting and communicating with others. Hopefully, by studying the Commonwealth

competencies, identifying your developmental opportunities, and working to refine your own competence, you can take charge of your career!

For additional information about the **Commonwealth Competencies** go to: [http://jobs.state.va.us/cc\\_planningctr.htm](http://jobs.state.va.us/cc_planningctr.htm). For the competencies, we first list the competencies and then define each. Finally, we list competency indicators; to describe what successful performance looks like.

## **COMMONWEALTH CAREER PATH**

Career opportunities in the Commonwealth are not limited to moving “up” to the next highest role and pay band, changing positions, or to becoming a supervisor. That’s because most roles describe a broad group of occupationally related positions that perform a range of work that requires increased knowledge and skills. For that reason, Commonwealth roles describe the career paths within the same or higher-level role for the same or different Career Group. The broad salary range and the Commonwealth’s pay practices provide flexibility in recognizing career development and advancement. ([Salary Structure](#))

For example: **Environmental Technician**

PAY BAND	PRACTITIONER ROLES
4	Environmental Specialist I

PAY BAND	MANAGER ROLES

### **Sample Career Path**

#### **Environmental Specialist I**

The Environmental Specialist I role provides career tracks for environmental technicians who are responsible for conducting projects or components of programs related to environmental management public health and safety and/or consumer protection. Level of expertise ranges from entry-level specialist to supervisor of specialized inspection activities to include planning and development for the assigned program or territory.

#### **Environmental Specialist II**

The Environmental Specialist II role provides career tracks for environmental specialists who serve as program experts in the conduct of environmental management and public health and safety and/or consumer protection activities or have supervisory and/or program coordination responsibilities.

## **ADDITIONAL OCCUPATIONAL INFORMATION CAN BE FOUND AT:**

O\*NET (Occupational Information Network)  
[http://online.onetcenter.org/gen\\_search\\_page](http://online.onetcenter.org/gen_search_page)

Virginia Employment Commission  
<http://www.alex.vec.state.va.us/>

Career One Stop  
<http://www.careeronestop.org/>

Virginia Career Resource Network <http://www.vacrn.net/>