



# California Occupational Guides

Guide for



## Environmental Remediation Specialists in California

**May also be called:** Chemical Engineers; Civil Engineers; Environmental Analysts; Environmental Engineers; Environmental Remediation Engineers; Environmental Remediation Scientists; Project Engineers; Remediation Engineers

### What Would I Do?

Environmental Remediation Specialists identify and clean up the damage caused by environmental contaminants. They design, implement, and manage remediation systems, such as groundwater treatment, bioremediation, and pesticide/herbicide impacted soils and groundwater. Remediation Specialists also offer technical assistance to project stakeholders and various agencies. This occupation is a subspecialty of Environmental Engineers.

Environmental Remediation Specialists work with a team of scientists, engineers, and technicians in fields such as geology, soil science, chemistry, and hydrology. The geologist or scientist determines the scope of contamination and provides the Environmental Remediation Specialist the background data needed to design a remediation system for the area.

In addition, Environmental Remediation Specialists conduct environmental sampling and oversee remedial construction. They develop site cleanup plans, evaluate and analyze data, and write reports. They conduct field investigations, monitor sites, manage the compliance of tanks and containers used for hazardous materials, and communicate environmental hazards to the public. Remediation Specialists also work closely with industry, business, and government agencies to ensure that they are in compliance with federal, State, and local environmental laws, such as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

### Tools and Technology

Remediation Specialists use a variety of tools, including air velocity and temperature monitors, core drills, mass spectrometers, photometers, and spectrophotometers. They may also use analytical, scientific, compliance, computer-aided design (CAD), graphics, photo imaging, map creation, and object or component-oriented development software. In addition, they may use office suite and project management software.

### Important Tasks and Related Skills

The sample skills and tasks shown below are common for the two closest occupations to Environmental Remediation Specialists: Environmental Engineers and Brownfield Redevelopment Specialists and Site Managers. Each task is matched to a sample skill required to carry out the task.

<i>Task</i>	<i>Skill Used in this Task</i>
Collaborate with environmental scientists, planners, hazardous waste technicians, engineers, and other specialists, and experts in law and business to address environmental problems.	Engineering and Technology
Prepare, review, and update environmental investigation and recommendation reports.	Reading Comprehension
Design and supervise the development of systems processes or equipment for control, management, or remediation of water, air, or soil quality.	Design
Provide technical-level support for environmental remediation and litigation projects, including remediation system design and determination of regulatory applicability.	Critical Thinking
Conduct feasibility or cost-benefit studies for environmental remediation projects.	Judgment and Decision Making
Coordinate on-site activities for environmental cleanup or remediation projects to ensure compliance with environmental laws, standards, regulations, or other requirements.	Oral Expression
Inspect sites to assess environmental damage or monitor cleanup progress.	Deductive Reasoning
Design or implement plans for surface or ground water remediation.	Problem Sensitivity
Prepare and submit permit applications for demolition, cleanup, remediation, or construction projects.	Information Ordering
Develop bid documents including coordinated drawings and specifications.	Written Expression
Train site staff on the operations and maintenance of the remediation systems.	Customer and Personal Service

Source: U.S. Department of Labor [Occupational Information Network \(O\\*NET\)](https://online.onetcenter.org) at [online.onetcenter.org](https://online.onetcenter.org)

### **Working Conditions**

Environmental Remediation Specialists work in office buildings, laboratories, or industrial plants. They frequently spend time outdoors at construction sites, facilities, businesses, and other locations to oversee project implementation or verify compliance with environmental laws. They may travel extensively to plants or worksites. When working in hazardous conditions, Environmental Remediation Specialists must follow health and safety procedures and wear protective equipment. Remediation Specialists usually work a standard 40-hour week, but may be required to work occasional evenings, weekends, and holidays, as needed.

Unionization is not common in this occupation. However, Remediation Specialists who work for a government agency may belong to a union.

### ***Will This Job Fit Me?***

The job of Environmental Remediation Specialist will appeal to those who enjoy activities that involve working with ideas; require an extensive amount of thinking; and include a practical, hands-on approach to problems and solutions. This occupation involves searching for facts and figuring out problems.

Environmental Remediation Specialists need strong written and oral communications skills as well as good interpersonal skills. They should have excellent project management skills, be team-oriented, be able to properly manage risks, and enjoy learning and staying current on new technology and innovation. In addition, they must be able to work well with both internal and external customers.

### ***What Wages and Benefits Can I Expect?***

#### **Wages**

A formal salary survey is not available for Environmental Remediation Specialists. However, Environmental Remediation Specialists is part of the broader occupational group Environmental Engineers. According to the Occupational Employment Statistics survey, the median wage in 2011 for Environmental Engineers in California was \$88,741 annually, or \$42.66 hourly. The median is the point at which half of the workers earn more and half earn less. All salaries depend on the pay structure established by each employer for work performed, the nature of the project, and the skill of the Specialists.

#### **Benefits**

Environmental Remediation Specialists generally receive excellent benefits, including health and life insurance, vacation, sick leave, and pension plans.

### ***What is the Job Outlook?***

With the increased focus on environmentally sustainable business practices, it is expected that there would be increased opportunities for Environmental Remediation Specialists as more companies worldwide are "going green." California leads the nation in terms of its promotion of green environmental practices, which will drive the demand for Environmental Remediation Specialists.

### ***How Do I Qualify?***

#### **Education, Training, and Other Requirements**

A bachelor's degree in an engineering discipline such as environmental, civil, chemical, or mechanical; or a scientific field such as geology is required to work as an Environmental Remediation Specialist. A master's degree in engineering is also recommended. Most engineering programs involve a concentration of study in an engineering specialty, along with courses in design, mathematics, physical and life sciences, and hands-on laboratory classes. In addition to the core classes which often reflect civil or chemical engineering basics, coursework may also include a focus on environmental toxicology, hazardous materials and waste management, hydrogeology, organic chemistry, and public health.

For those doing field work, a valid California Driver License is required. Some employers also require that candidates successfully pass a background check and drug screening.

#### **Experience**

Most employers prefer that applicants have at least five years of experience in civil or environmental engineering or a related field. Candidates with experience in remedial design, soil and groundwater remediation, and managing hazardous material tanks and containment systems, should be desirable.

### **Early Career Planning**

High school students planning to become an Environmental Remediation Specialist should take courses in English, mathematics, physical and life sciences, computer science, and mechanical drawing or computer-aided design processes. There are Regional Occupational Programs (ROP) available in some areas for environmental science and technology or a related scientific or engineering program. To find an ROP program near you, go to the California Association of Regional Occupational Centers and Programs Web site at [www.carocp.org/carocps.html](http://www.carocp.org/carocps.html).

### **Work-Study Programs**

Some colleges and universities help students find work-study programs or internships. Internships are usually paid and are an opportunity for the sponsoring organization to recruit future employees.

### **Continuing Education**

While continuing education is currently not a requirement for most Environmental Remediation Specialists, they need to continue their education through workshops, seminars, and ongoing training in order to keep current with constant changes to environmental codes and regulations.

### **Licensing and Certification**

Many employers prefer a Professional Engineer (PE) license, but will accept an Engineer-in-Training (EIT) or a Fundamentals of Engineering (FE) certificate. To obtain a PE license, Engineers must first pass the Engineer-in-Training or Fundamentals in Engineering examination which requires at least three years of coursework from a college or university offering an engineering program accredited by the Accreditation Board for Engineering and Technology (ABET), or three years of engineering-related experience. The next step is to pass the professional examination which requires a bachelor's degree in engineering from an ABET-accredited institution, along with two years of eligible engineering experience. The license must be renewed every two years. In addition, some employers may require OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) certification.

For more information, go to the U.S. Department of Labor's Career InfoNet Web site at [www.acinet.org](http://www.acinet.org) and scroll down to "Career Tools." Click on "Certification Finder" at [www.acinet.org/certifications\\_new/default.aspx](http://www.acinet.org/certifications_new/default.aspx) and follow the instructions to locate certification programs.

### **Where Can I Find Training?**

There are two ways to search for training information at [www.labormarketinfo.edd.ca.gov/?Pageid=1013](http://www.labormarketinfo.edd.ca.gov/?Pageid=1013):

- [Search by Field of Study](#) to find what programs are available and what schools offer those programs. You may use keywords such as: Chemical Engineering, Civil Engineering, and Environmental Engineering.
- [Search by Training Provider](#) to find schools by name, type of school, or location.

Contact the schools you are interested in to learn about the classes available, tuition and fees, and any prerequisite course work.

### ***Where Would I Work?***

The largest industries employing Environmental Remediation Specialists\* in California are as follows:

<i>Industry Title</i>	<i>Percent of Estimated Employment in California*</i>
Architectural and Engineering Services	32.6%
Management & Technical Consulting Svc	21.5%
Local Government	21.1%
Federal Government	7.1%

Source: EDD/LMID Staffing Patterns at [www.labormarketinfo.edd.ca.gov/?Pageid=1012](http://www.labormarketinfo.edd.ca.gov/?Pageid=1012)

\* Data for Environmental Engineers was used.

### **Finding a Job**

Direct application to employers is one of the most common and effective job search methods. Jobs may also be found through classified advertisements in newspapers, online job boards and professional engineering organizations. **Online job opening systems** include JobCentral at [www.jobcentral.com](http://www.jobcentral.com) and CalJOBS<sup>SM</sup> at [www.caljobs.ca.gov](http://www.caljobs.ca.gov).

To find your nearest One-Stop Career Center, go to [Service Locator](http://www.servicelocator.org) at [www.servicelocator.org](http://www.servicelocator.org). View the [helpful job search tips](http://www.labormarketinfo.edd.ca.gov/occguides/JobSearchTips.pdf) at [www.labormarketinfo.edd.ca.gov/occguides/JobSearchTips.pdf](http://www.labormarketinfo.edd.ca.gov/occguides/JobSearchTips.pdf) for more resources. (requires [Adobe Reader](#)).

### **Yellow Page Headings**

You can focus your local job search by checking employers listed online or in your local telephone directory. Below are some suggested headings where you might find employers of Environmental Remediation Specialists.

- Engineering Consultants
- Engineering Services
- Environmental Engineers
- Environmental Services-Site Remediation
- Government Offices

### **Find Possible Employers**

To locate a list of employers in your area, use "Find Employers" on the LaborMarketInfo Web site at [www.labormarketinfo.edd.ca.gov/aspdotnet/databrowsing/empMain.aspx?menuChoice=emp](http://www.labormarketinfo.edd.ca.gov/aspdotnet/databrowsing/empMain.aspx?menuChoice=emp)

- Select the search for employers by occupation.
- Select a geographic area.
- Search for an occupation by keyword, occupation, or category.
- Select one of the top industries that employ the occupation.
- This will give you a list of employers in that industry in your area.
- Click on "View Filter Selections" to limit your list to specific cities or employer size.
- Click on an employer for the street address, telephone number, size of business, Web site, etc.
- Contact the employer for possible employment.

### ***Where Could This Job Lead?***

Environmental Remediation Specialists may advance into senior technical or managerial positions. In addition, a master's or doctorate degree may lead to teaching opportunities.

### ***Related Occupations***

Below is a list of occupations related to Environmental Remediation Specialists.

- Agricultural Engineers (SOC 17-2021)
- Chemical Engineers (SOC 17-2041)
- Civil Engineers (SOC 17-2051)
- Conservation Scientists (SOC 19-1031)
- Environmental Scientists and Specialists, Including Health (SOC 19-2041)
- Geoscientists, Except Hydrologists and Geographers (SOC 19-2042)
- Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (SOC 17-2111)
- Mining and Geological Engineers, Including Mining Safety Engineers (SOC 17-2151)

### ***Other Sources***

- California Board for Professional Engineers, Land Surveyors, and Geologists  
[www.pels.ca.gov](http://www.pels.ca.gov)
- California Department of Consumer Affairs  
[www.dca.ca.gov](http://www.dca.ca.gov)
- Academy of Board Certified Environmental Professionals  
[www.abcep.org](http://www.abcep.org)
- Accreditation Board for Engineering and Technology  
[www.abet.org](http://www.abet.org)
- American Academy of Environmental Engineers  
[www.aaee.net](http://www.aaee.net)
- American Society for Engineering Education  
[www.asee.org](http://www.asee.org)
- The Council of Engineering & Scientific Specialty Boards  
[www.cesb.org](http://www.cesb.org)
- Junior Engineering Technical Society  
[www.jets.org](http://www.jets.org)
- National Council of Examiners for Engineering and Surveying  
[www.ncees.org](http://www.ncees.org)
- National Society of Professional Engineers  
[www.nspe.org](http://www.nspe.org)
- U.S. Department of Labor, Occupational Safety and Health Administration  
[www.osha.gov](http://www.osha.gov)

These links are provided for your convenience and do not constitute an endorsement by EDD.

### ***For the Career Professional***

The following codes are provided to assist counselors, job placement workers, or other career professionals.

System	Code
SOC – <a href="http://www.bls.gov/soc">Standard Occupational Classification</a> at <a href="http://www.bls.gov/soc">www.bls.gov/soc</a>	N/A
O*NET – <a href="http://online.onetcenter.org">Occupational Information Network</a> at <a href="http://online.onetcenter.org">online.onetcenter.org</a>	N/A
<a href="http://online.onetcenter.org/find/InterestCodes(RIASEC)">Interest Codes (RIASEC)</a> at <a href="http://online.onetcenter.org/find/descriptor/browse/Interests/#cur">online.onetcenter.org/find/descriptor/browse/Interests/#cur</a>	IRC

The California Occupational Guides are a product of:  
The California Employment Development Department  
Labor Market Information Division  
[www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov)

Published: 9/19/2011

*This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner.*

