

Labor Market Analysis: 0303.00/Environmental Technology
Environmental Field Technician, Environmental Technician, Field Sampler
 Certificate requiring 16 to fewer than 30 semester units
 Los Angeles Center of Excellence, May 2023

Summary

Program Endorsement:	Endorsed: All Criteria Met <input checked="" type="checkbox"/>	Endorsed: Some Criteria Met <input type="checkbox"/>	Not Endorsed <input type="checkbox"/>
Program Endorsement Criteria			
Supply Gap:	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Living Wage: (Entry-Level, 25th)	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Education:	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Emerging Occupation(s)			
	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>

The Los Angeles Center of Excellence for Labor Market Research (LA COE) prepared this report to provide regional labor market supply and demand data related to three middle-skill occupations:

- **Environmental Engineering Technologists and Technicians (17-3025)** Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental problems, including waste treatment and site remediation, under the direction of engineering staff or scientists. May assist in the development of environmental remediation devices.¹
- **Environmental Science and Protection Technicians, Including Health (19-4042)** Perform laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health, under the direction of an environmental scientist, engineer, or other specialist. May collect samples of gases, soil, water, and other materials for testing.²
- **Geological Technicians, Except Hydrologic Technicians (19-4043)** Assist scientists or engineers in the use of electronic, sonic, or nuclear measuring instruments in laboratory, exploration, and production activities to obtain data indicating resources such as metallic ore, minerals, gas, coal, or petroleum. Analyze mud and drill cuttings. Chart pressure, temperature, and other characteristics of wells or bore holes.³

¹ [Environmental Engineering Technologists and Technicians : U.S. Bureau of Labor Statistics \(bls.gov\)](https://www.bls.gov/occupations/17-3025)

² [Environmental Science and Protection Technicians : U.S. Bureau of Labor Statistics \(bls.gov\)](https://www.bls.gov/occupations/19-4042)

³ [Geological Technicians, Except Hydrologic Technicians \(bls.gov\)](https://www.bls.gov/occupations/19-4043)

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.⁴ This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there appears to be a supply gap for these environmental technician occupations in the region. Furthermore, entry-level wages exceed the self-sufficiency standard wage in Los Angeles County, and the Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for the occupations in this report. **Therefore, due to all the criteria being met, the LA COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, **327 jobs are projected to be available annually** in the region due to new job growth and replacements, **which is more than the three-year average of 64 awards conferred** by educational institutions in the region.
- **Living Wage Criteria** – Within Los Angeles County, all three environmental technician occupations have **entry-level wages above the self-sufficiency standard hourly wage** (\$18.10/hour).⁵
- **Educational Criteria** – The Bureau of Labor Statistics (BLS) lists an **associate degree as the typical entry-level education** for all three occupations in this report.
 - Furthermore, the national-level educational attainment data indicates **between 34% and 51% of workers in the field have completed some college or an associate degree.**

Supply:

- There are **5 community colleges** in the greater LA/OC region that issue awards related to environmental technology, conferring an average of **64 awards annually** between 2018 and 2021.
- Currently, there are **no non-community college institutions** in the greater LA/OC region that have conferred sub-baccalaureate awards for environmental technician programs in the past three years.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for environmental technician occupations. In the greater Los Angeles/Orange County region, the number of jobs related to

⁴ The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

⁵ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

these occupations is projected to increase by 9% through 2026. There will be more than 320 job openings per year through 2026 due to job growth and replacements.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties⁶

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	1,833	2,003	170	9%	231
Orange	755	826	71	9%	96
Total	2,588	2,829	241	9%	327

Wages

The labor market endorsement in this report considers the entry-level hourly wages for these environmental technician occupations in Los Angeles County as they relate to the county’s self-sufficiency standard wage. Orange County wages are included below in order to provide a complete analysis of the greater LA/OC region. Detailed wage information, by county, is included in Appendix A.

Los Angeles County

All three occupations in this report have entry-level wages above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$18.42 and \$23.63. Experienced workers can expect to earn wages between \$30.71 and \$48.19.

Exhibit 2: Earnings for Occupations in LA County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Environmental Engineering Technologists and Technicians (17-3025)	\$22.86	\$35.75	\$41.55	\$74,400
Environmental Science and Protection Technicians, Including Health (19-4042)	\$18.42	\$24.13	\$30.71	\$50,200
Geological Technicians, Except Hydrologic Technicians (19-4043)	\$23.63	\$29.68	\$48.19	\$61,700

*rounded to the nearest \$100

Orange County

The majority (77%) of annual openings for these environmental technician occupations have entry-level wages below the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$17.42 and \$23.02. Two occupations in this report have entry-level wages above the county’s self-sufficiency standard wage: *geological technicians, except hydrologic technicians* (\$23.02) and *environmental engineering technologists and*

⁶ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

technicians (\$22.74). Experienced workers can expect to earn wages between \$28.26 and \$46.97, which are higher than the self-sufficiency standard.

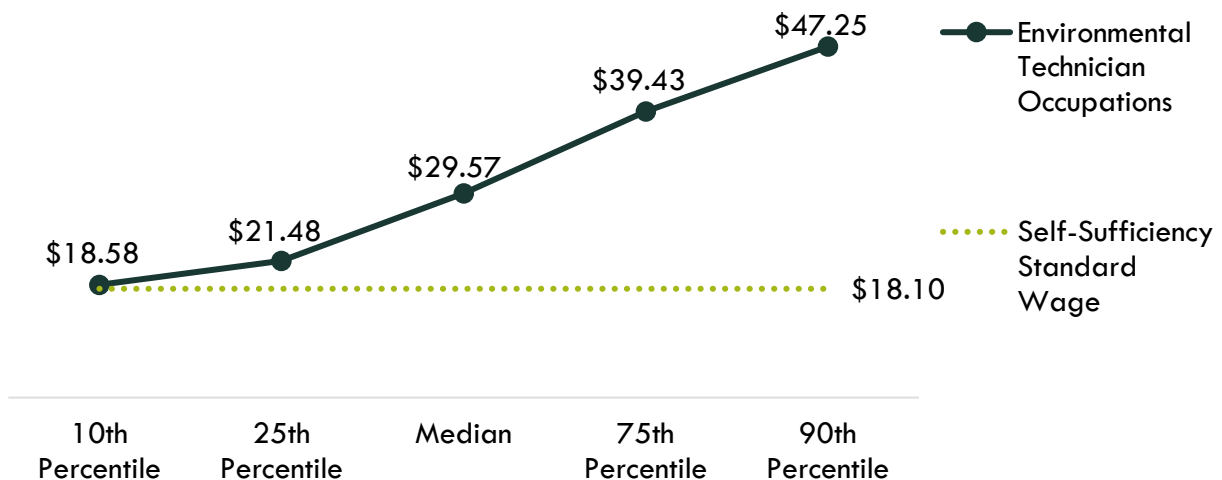
Exhibit 3: Earnings for Occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Environmental Engineering Technologists and Technicians (17-3025)	\$22.74	\$35.46	\$40.90	\$73,800
Environmental Science and Protection Technicians, Including Health (19-4042)	\$17.42	\$22.65	\$28.26	\$47,100
Geological Technicians, Except Hydrologic Technicians (19-4043)	\$23.02	\$28.91	\$46.97	\$60,100

*rounded to the nearest \$100

On average, the entry-level earnings for the occupations in this report are \$21.48; this is above the living wage for one single adult in Los Angeles County (\$18.10). Exhibit 4 shows the average wage for the occupations in this report, from entry-level to experienced workers.

Exhibit 4: Average Hourly Earnings for Environmental Technician Occupations in LA/OC

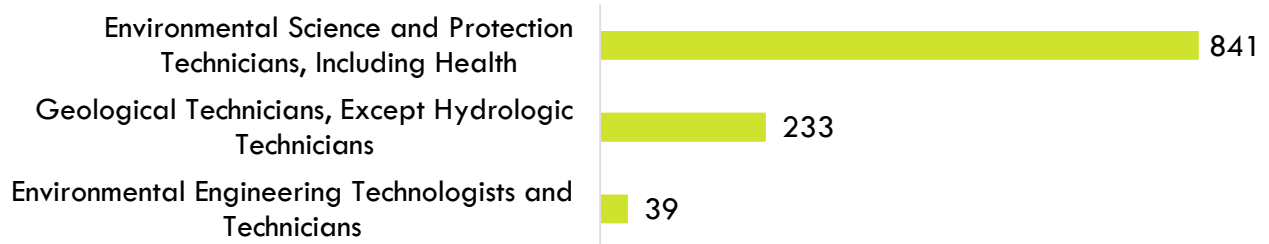


Job Postings

There were 1,113 online job postings related to environmental technicians listed in the past 12 months. Exhibit 5 displays the number of job postings by occupation. The majority of job postings (76%) were for *environmental science and production technicians, including health*, followed by *geological technicians, except hydrologic technicians* (21%) and *environmental engineering technologists and technicians* (4%). The highest number of job postings were for environmental

technicians, environmental field technicians, environmental monitoring technicians, materials technicians, and hazardous materials technicians. The top skills were emergency response, biology, Hazardous Waste Operations and Emergency Response Standard (HAZWOPER), environmental health and safety, and Occupational Safety and Health Administration (OSHA). The top three employers, by number of job postings, in the region were Clean Harbors, Montrose Environmental Group and Harsco Corporation.

Exhibit 5: Job postings by occupation (last 12 months)



Educational Attainment

The Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for all three occupations in this report. Furthermore, the national-level educational attainment data indicates between 34% and 51% of workers in the field have completed some college or an associate degree. Of the 53% of environmental technician job postings listing a minimum education requirement in the greater Los Angeles/Orange County region, 67% (397) requested high school or vocational training, 10% (60) requested an associate degree, and 23% (135) requested a bachelor’s degree.

Educational Supply

Community College Supply

Exhibit 6 shows the annual and three-year average number of awards conferred by community colleges in the related TOP code: Environmental Technology (0303.00). The colleges with the most completions in the region are Santa Monica and Rio Hondo.

Exhibit 6: Regional community college awards (certificates and degrees), 2018-2021

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
0303.00	Environmental Technology	Rio Hondo	20	9	4	11
		Santa Monica	26	37	74	46
		LA Subtotal	46	46	78	57
		Irvine	-	4	9	4
		Saddleback	1	-	-	0
		Santiago Canyon	5	3	-	3
		OC Subtotal	6	7	9	7
Supply Total/Average			52	53	87	64

Non-Community College Supply

For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for environmental field technicians. Currently, there are no non-community college institutions in the greater LA/OC region that have conferred sub-baccalaureate awards for environmental technicians in the past three years. While four-year colleges in the LA/OC region, such as UC Irvine and University of Southern California, have awarded bachelor's degrees in Environmental/Environmental Health Engineering (CIP Code 14.1401) programs, there are no non-community colleges in the region that have awarded sub-baccalaureate awards in environmental technician programs, such as the aforementioned CIP code as well as Mining Technology/ Technician (15.0901), Hazardous Material Management and Waste Technology/Technician (15.0508), or Environmental Engineering Technology/Environmental Technology (15.0507) over the past three years.

Appendix A: Occupational demand and wage data by county

Exhibit 7. Los Angeles County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Environmental Engineering Technologists and Technicians (17-3025)	274	296	21	8%	32	\$22.86	\$35.75	\$41.55
Environmental Science and Protection Technicians, Including Health (19-4042)	1,453	1,588	135	9%	185	\$18.42	\$24.13	\$30.71
Geological Technicians, Except Hydrologic Technicians (19-4043)	106	119	14	13%	14	\$23.63	\$29.68	\$48.19
Total	1,833	2,003	170	9%	231	-	-	-

Exhibit 8. Orange County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Environmental Engineering Technologists and Technicians (17-3025)	123	134	10	8%	15	\$22.74	\$35.46	\$40.90
Environmental Science and Protection Technicians, Including Health (19-4042)	578	630	53	9%	73	\$17.42	\$22.65	\$28.26
Geological Technicians, Except Hydrologic Technicians (19-4043)	55	63	8	14%	8	\$23.02	\$28.91	\$46.97
Total	755	826	71	9%	96	-	-	-

Exhibit 9. Los Angeles and Orange Counties

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	% Age 55 and older*	Typical Entry-Level Education
Environmental Engineering Technologists and Technicians (17-3025)	397	429	32	8%	47	28%	Associate degree
Environmental Science and Protection Technicians, Including Health (19-4042)	2,030	2,218	188	9%	258	21%	Associate degree
Geological Technicians, Except Hydrologic Technicians (19-4043)	160	182	21	13%	22	25%	Associate degree
Total	2,588	2,829	241	9%	327	-	-

*The average percentage of workers age 55 and older across all occupations in the greater LA/OC region is 27%. Environmental science and production technicians, including health (19-4042) have a smaller share of older workers, which typically indicates fewer replacements needs to offset the amount of impending retirements.

Appendix B: Sources

- O*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

For more information, please contact:

Luke Meyer, Director
Los Angeles Center of Excellence
Lmeyer7@mtsac.edu

