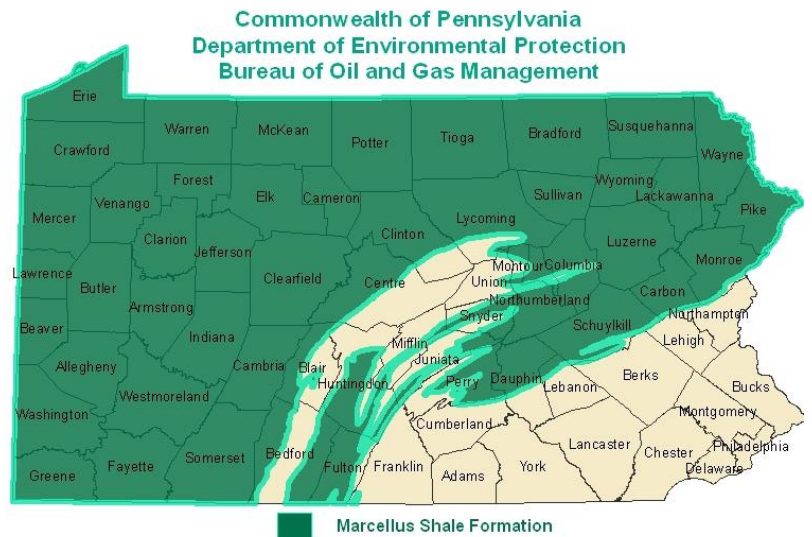


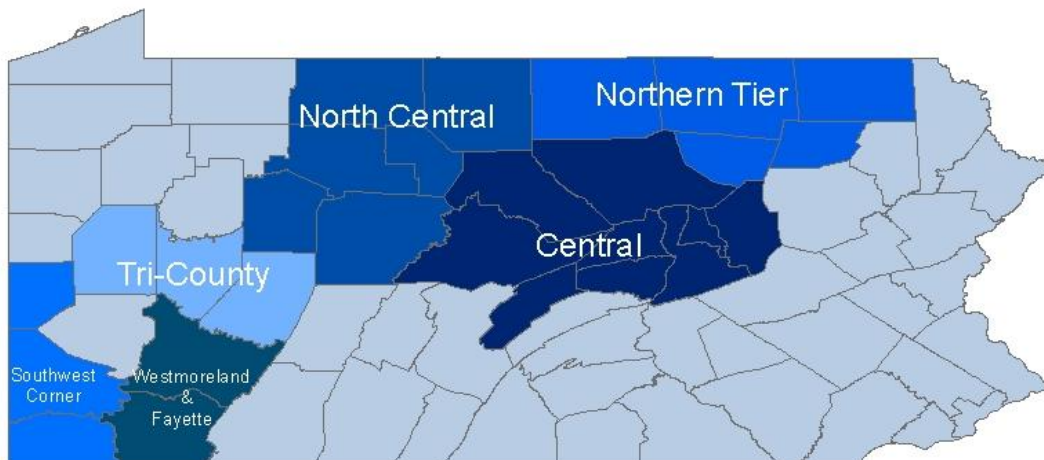
Summary of Pennsylvania's Six Workforce Investment Areas with Significant Marcellus Shale Activity

Pennsylvania's Marcellus Shale Formation

The Marcellus Shale is a rock formation that underlies much of Pennsylvania and portions of New York, Ohio and West Virginia at a depth of 5,000 to 8,000 feet. It is believed to hold trillions of cubic feet of natural gas. This formation has long been considered prohibitively expensive to access but recent advances in drilling technology and rising natural gas prices have attracted new interest in this previously untapped formation.



The Center for Workforce Information & Analysis (CWIA) used the North American Industry Classification System (NAICS) to define the Marcellus Shale industry sector. Much of the information included in this document reflects data on a group of six industries identified as “core,” and a group of 30 identified as “ancillary” to the processes involved in accessing the resources in the Marcellus Shale formation. The six Workforce Investment Areas (WIAs) most closely involved in Marcellus Shale activities are Central, North Central, Northern Tier, Southwest Corner, Tri-County, West Central, and Westmoreland-Fayette.



Demographics

In September, all six WIAs had unemployment rates lower than or equal to the national rate, and five had rates lower than or equal to the state's rate. Within the six WIAs, Tri-County had the lowest rate at 7.2% and North Central the highest at 8.6%. Among Pennsylvania's 22 WIA's, rates ranged from 6.2% in the Chester County WIA to 11% in the Philadelphia County WIA.

Most of the six WIAs had some population growth in the 1990s, including the Tri-County region which had a growth rate almost twice that of the state. In the 2000s, however, most regions had little to negative growth. North Central, Southwest Corner, and Westmoreland-Fayette had fewer people in 2010 than they did in 1990. The six WIAs' combined population was 93.3% white, non-Hispanic, and 49.5% male.

Unemployment Rates

Area	September 2011 Preliminary Seasonally Adjusted Unemployment Rate
Central WIA	7.7%
Northern Tier WIA	7.4%
North Central WIA	8.6%
Southwest Corner WIA	7.5%
Tri-County WIA	7.2%
Westmoreland & Fayette WIA	8.0%
Pennsylvania	8.3%
United States	9.1%

Source: Pennsylvania Department of Labor & Industry, Local Area Unemployment Statistics

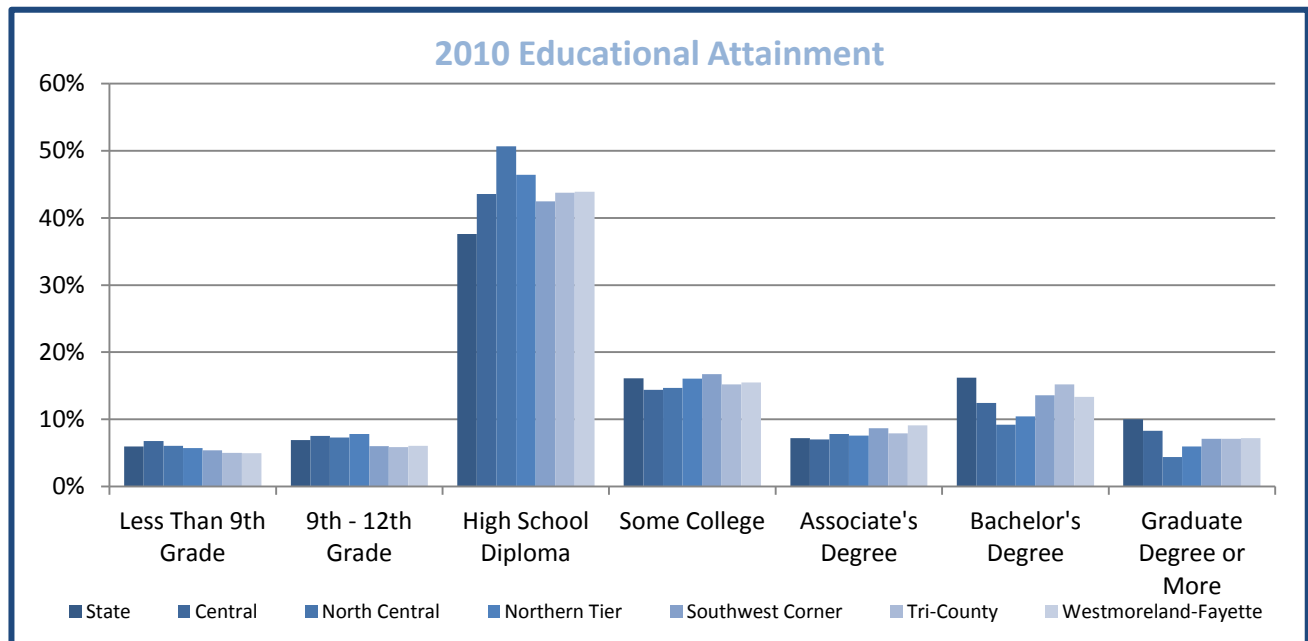
Population

Area	1990 Population	2000 Population	2010 Population	1990-2000 % Change	2000-2010 % Change
Central WIA	576,439	596,315	620,760	3.4%	4.1%
Northern Tier WIA	176,653	181,008	182,663	2.5%	0.9%
North Central WIA	228,819	234,416	224,780	2.4%	-4.1%
Southwest Corner WIA	430,227	424,981	417,045	-1.2%	-1.9%
Tri-County WIA	315,485	336,080	341,683	6.5%	1.7%
Westmoreland-Fayette WIA	515,672	518,637	501,775	0.6%	-3.3%
Six WIAs combined	2,243,295	2,291,437	2,288,706	2.1%	-0.1%
Pennsylvania	11,881,643	12,281,054	12,702,379	3.4%	3.4%
United States	248,709,873	281,421,906	308,745,538	13.2%	9.7%

Source: U.S. Census Bureau

Educational Attainment

All regions had lower proportions of people who have attained a four-year degree or higher than the state. North Central had the smallest group of four-year and advanced degree holders. The region had about half the number of these degree holders as the state.



Source: Economic Modeling Specialists, Inc.

Industry Demographics

Across the state, the industries making up the Marcellus Shale sector had a predominantly male workforce despite the fact that the overall workforce was divided nearly evenly with slightly more jobs held by females. Most industries had a higher percentage of employment in the 45 to 54 year old age range than any other age group. The industry groups in the tables below encompass, but are not limited to, all of the industries defined by the CWIA as core and ancillary to the Marcellus Shale industry sector.

Industry Gender Demographics, 4th Quarter 2010

NAICS Code	NAICS Title	Pennsylvania	
		Male	Female
2111	Oil and Gas Extraction	81.1%	18.9%
2131	Support Activities for Mining	92.3%	7.7%
2211	Electric Power Generation, Transmission and Distribution	83.1%	16.9%
2212	Natural Gas Distribution	74.2%	25.8%
2213	Water, Sewage and Other Systems	73.4%	26.6%
2371	Utility System Construction	88.9%	11.1%
2373	Highway, Street, and Bridge Construction	85.8%	14.2%
2389	Other Specialty Trade Contractors	89.0%	11.0%
3251	Basic Chemical Manufacturing	77.9%	22.0%
3311	Iron and Steel Mills and Ferroalloy Manufacturing	89.6%	10.4%
3312	Steel Product Manufacturing from Purchased Steel	87.3%	12.7%
3331	Agriculture, Construction, and Mining Machinery Manufacturing	86.0%	14.0%
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	75.6%	24.4%
4841	General Freight Trucking	88.9%	11.1%

4842	Specialized Freight Trucking	87.4%	12.6%
4862	Pipeline Transportation of Natural Gas	88.6%	11.4%
5311	Lessors of Real Estate	56.3%	43.7%
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	76.5%	23.5%
5413	Architectural, Engineering, and Related Services	74.8%	25.2%
5416	Management, Scientific, and Technical Consulting Services	54.0%	46.0%
5629	Remediation and Other Waste Management Services	81.7%	18.3%
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	85.5%	14.5%
9241	Administration of Environmental Quality Programs	71.4%	28.6%
9261	Administration of Economic Programs	61.0%	39.0%
All Industry Groups		49.4%	50.6%

Source: U.S. Census Bureau, Local Employment Dynamics

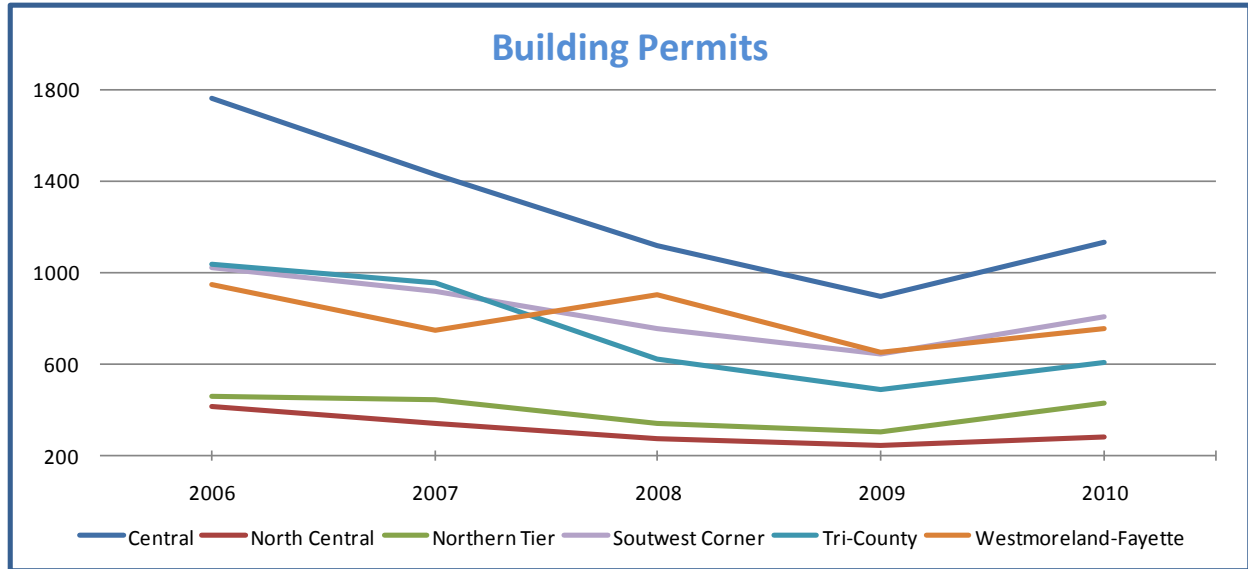
Industry Age Demographics, 4th Quarter 2010

NAICS Code	NAICS Title	Pennsylvania				
		14-24	25-34	35-44	45-54	55+
2111	Oil and Gas Extraction	7.8%	28.0%	21.0%	26.5%	16.7%
2131	Support Activities for Mining	15.4%	32.8%	22.2%	19.4%	10.1%
2211	Electric Power Generation, Transmission and Distribution	3.0%	14.3%	18.4%	37.7%	26.5%
2212	Natural Gas Distribution	-----	-----	-----	-----	-----
2213	Water, Sewage and Other Systems	3.1%	12.0%	20.2%	33.2%	31.4%
2371	Utility System Construction	8.2%	21.3%	22.5%	28.2%	19.9%
2373	Highway, Street, and Bridge Construction	5.5%	17.5%	23.3%	32.0%	21.8%
2389	Other Specialty Trade Contractors	10.6%	21.2%	23.3%	26.4%	18.6%
3251	Basic Chemical Manufacturing	2.6%	14.8%	23.2%	33.0%	26.4%
3311	Iron and Steel Mills and Ferroalloy Manufacturing	2.3%	10.2%	20.6%	33.5%	33.4%
3312	Steel Product Manufacturing from Purchased Steel	3.9%	12.2%	21.2%	31.9%	30.9%
3331	Agriculture, Construction, and Mining Machinery Manufacturing	5.3%	17.4%	22.7%	29.3%	25.3%
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	7.0%	16.3%	21.5%	28.7%	26.5%
4841	General Freight Trucking	4.2%	13.0%	24.4%	32.5%	25.9%
4842	Specialized Freight Trucking	6.5%	16.1%	22.6%	30.0%	24.8%
4862	Pipeline Transportation of Natural Gas	2.3%	14.8%	21.1%	40.4%	21.4%
5311	Lessors of Real Estate	7.7%	16.3%	18.8%	27.0%	30.2%
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	7.6%	26.2%	27.4%	25.2%	13.5%
5413	Architectural, Engineering, and Related Services	5.6%	22.6%	21.9%	25.7%	24.2%
5416	Management, Scientific, and Technical Consulting Services	6.6%	26.8%	24.8%	23.4%	18.4%
5629	Remediation and Other Waste Management Services	8.6%	21.5%	24.8%	28.4%	16.7%
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	9.0%	18.4%	22.4%	29.1%	21.1%
9241	Administration of Environmental Quality Programs	2.7%	15.4%	21.8%	31.8%	28.3%
9261	Administration of Economic Programs	-----	-----	-----	-----	-----
All Industry Groups		13.0%	20.0%	20.9%	24.6%	21.5%

Source: U.S. Census Bureau, Local Employment Dynamics

Building Permits

Both the state and the regions have seen a decline in building permits since 2006, with an uptick starting in 2010. But while the state's increase was 10%, the regions showed stronger growth rates, ranging from 15% to 41%.



Source: U.S. Census Bureau

Employment

Marcellus Shale core and ancillary industries have added between 497 and 3,229 jobs in each of the six WIAs in a three-year period. The Northern Tier region has seen the most growth, with the number of jobs in the core industries increasing by over 2,000 percent. The Tri-County region has had the smallest growth.

Area	Industry Group	2008 Q1	2011 Q1	Change	% Change
Northern Tier	Core	87	1,893	1,806	2075.9%
	Ancillary	1,621	3,044	1,423	87.8%
Southwest Corner	Core	670	1,999	1,329	198.4%
	Ancillary	10,034	10,759	725	7.2%
North Central	Core	1,980	2,523	543	27.4%
	Ancillary	3,908	4,229	321	8.2%
Westmoreland & Fayette	Core	430	1,097	667	155.1%
	Ancillary	9,842	9,842	0	0.0%
Tri-County	Core	2,219	2,804	585	26.4%
	Ancillary	8,876	8,788	-88	-1.0%
Central	Core	115	1,597	1,482	1288.7%
	Ancillary	8,913	10,314	1,401	15.7%
Pennsylvania	Core	9,520	20,387	10,868	114.2%
	Ancillary	194,841	193,813	-1,028	-0.5%

Source: Pennsylvania Department of Labor & Industry, Quarterly Census of Employment & Wages

Wages

In 2010, average wages in the Marcellus Shale WIAs ranged from \$33,782 to \$41,156, all of which were lower than the state average of \$45,747.

The average wage of the core industries in the regions ranged from \$58,414 to \$84,309, often close to twice the regional average wage. This was at least \$12,667 higher than the state average wage.

Ancillary industries also had high average wages, ranging from \$41,967 to \$63,080. Four out of the six WIA regions had an average wage in the ancillary industry group that was higher than the overall state average wage.

Area	Core	Ancillary	Region
Northern Tier	\$84,309	\$41,967	\$35,010
Southwest Corner	\$73,797	\$63,080	\$41,156
North Central	\$61,793	\$43,849	\$33,782
Westmoreland & Fayette	\$75,176	\$59,321	\$36,192
Tri-County	\$58,414	\$61,289	\$39,736
Central	\$68,124	\$49,476	\$36,977
Pennsylvania	\$73,150	\$61,871	\$45,747

Source: Pennsylvania Department of Labor & Industry, Quarterly Census of Employment & Wages

New Hires

Most regions had an increased number of new hires in second quarter of 2011 compared to second quarter 2008 in both the core and ancillary industries. Across the six WIAs, there were more than three times as many new hires in second quarter 2011 than in second quarter 2008.

New Hires

Area	Industry Group	2008 Q2	2009 Q2	2010 Q2	2011 Q2	Volume Change 2008Q2 – 2011Q2	Percent Change 2008Q2 – 2011Q2
Northern Tier	Core	0	1	82	170	170	N/A
	Ancillary	41	38	147	184	143	348.8%
Southwest Corner	Core	36	41	243	218	182	505.6%
	Ancillary	354	308	329	380	26	7.3%
North Central	Core	113	170	254	463	350	309.7%
	Ancillary	118	53	119	169	51	43.2%
Westmoreland & Fayette	Core	9	11	65	32	23	255.6%
	Ancillary	473	423	626	682	209	44.2%
Tri-County	Core	214	74	209	179	-35	-16.4%
	Ancillary	536	381	552	591	55	10.3%
Central	Core	0	1	98	191	191	N/A
	Ancillary	252	291	225	396	144	57.1%
Pennsylvania	Core	894	668	1,750	2,129	1,235	138.1%
	Ancillary	15,050	11,248	14,362	16,342	1,292	8.6%

Source: Pennsylvania Department of Labor & Industry, New Hires Program

Workforce Compatibility

The Marcellus Shale industries require certain numbers of high-skilled workers. Across the six WIA regions, the skilled worker requirements of most industries are reasonably compatible with the skills found in the local workforce. In many cases, one in four or one in five workers in the regional workforce are highly compatible with the skill needs of the Marcellus Shale industries. However, skill gaps can be found in most regions in the following industries: fossil fuel electric power generation; natural gas distribution; engineering services; geophysical surveying and mapping services; testing laboratories; industrial gas manufacturing; and commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance.

Appendix 1

Northern Tier WIA Industry and Workforce Compatibility

Core		% Skilled Workforce in Industry	% of Region's Workforce Compatible
211111	Crude Petroleum and Natural Gas Extraction	23.8%	21.6%
211112	Natural Gas Liquid Extraction	--	--
213111	Drilling Oil and Gas Wells	16.7%	21.6%
213112	Support Activities for Oil and Gas Operations	16.7%	22.1%
237120	Oil and Gas Pipeline and Related Structures Construction	39.8%	19.4%
486210	Pipeline Transportation of Natural Gas	43.8%	15.9%
Ancillary			
221112	Fossil Fuel Electric Power Generation	--	--
221210	Natural Gas Distribution	35.7%	13.7%
221310	Water Supply and Irrigation Systems	63.1%	23.4%
221320	Sewage Treatment Facilities	62.0%	24.1%
237110	Water and Sewer Line and Related Structures Construction	39.8%	19.4%
237310	Highway, Street, and Bridge Construction	--	--
238912	Nonresidential site preparation contractors	43.6%	21.0%
325110	Petrochemical Manufacturing	--	--
325120	Industrial Gas Manufacturing	31.9%	13.6%
331111	Iron & Steel Mills	--	--
331210	Iron & Steel Pipe & Tube Manufacturing from Purchased Steel	--	--
333131	Mining Machinery & Equipment Manufacturing	--	--
333132	Oil & Gas Field Machinery Manufacturing	--	--
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	44.5%	17.8%
423830	Industrial Machinery and Equipment Merchant Wholesalers	--	--
423840	Industrial Supplies Merchant Wholesalers	44.1%	21.6%
484110	General Freight Trucking, Local	45.0%	21.6%
484220	Specialized Freight (except Used Goods) Trucking, Local	9.8%	25.9%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	9.9%	25.9%

531190	Lessors of Other Real Estate Property	39.7%	24.0%
532412	Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing	31.5%	19.9%
541330	Engineering Services	46.0%	2.8%
541360	Geophysical Surveying and Mapping Services	46.4%	2.9%
541380	Testing Laboratories	38.3%	6.2%
541620	Environmental Consulting Services	29.6%	24.2%
562910	Remediation Services	21.6%	17.1%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	51.6%	14.1%
924110	Admin. Of Air & Water Resources & Solid Waste Management Programs	--	--
924120	Admin. Of Conservation Programs	--	--
926130	Regulation & Admin. Of Communications, Electric, Gas, & Other Utilities	--	--

Source: Economic Modeling Specialists, Inc.

Appendix 2

High Priority Occupations and the Marcellus Shale Industries

To compete in today's global economy, businesses need a skilled workforce, and our citizens need increasingly higher levels of education and knowledge. Workforce education and training programs need to be aligned with the actual skills required of jobs in our economy.

High Priority Occupations, or HPOs, are job categories, within selected industry clusters, that are in demand by employers, have higher skill needs and are likely to provide family-sustaining wages. Statewide and local HPOs are identified annually by the Pennsylvania Department of Labor & Industry using federal and state labor market data as well as projections based on U.S. Department of Labor models.

Training program funding under the Workforce Investment Act is based on local HPO lists. HPO lists also impact the Economic Development Stipend funding for the state's 14 community colleges as well as all programs of studies offered by the Bureau of Career and Technical Education (Pennsylvania Department of Education).

The development of a **Marcellus Shale HPO list** will help inform job seekers of the employment opportunities available to them in this emerging sector. In order for this growth to continue, job seekers must be aware of the variety of career options available to them and have the appropriate skills needed for the jobs created by these industries.

HPO List for Marcellus Shale Industries

Cost Estimators	Office Clerks
Billing & Posting Clerks & Machine Operators	Operating Engineers
Bookkeeping, Accounting & Auditing Clerks	Plumbers, Pipefitters & Steamfitters
Construction Laborers	Production, Planning & Expediting Clerks
Customer Service Representatives	Pump Operators
Derrick Operators, Oil & Gas	Rotary Drill Operators, Oil & Gas
Electrical & Electronic Engineering Technicians	Roustabouts, Oil & Gas
Electrical Power-Line Installers & Repairers	Sales Representatives, Scientific & Technical
Environmental Engineering Technicians	Secretaries
Gas Compressor & Gas Pumping Station Operators	Service Unit Operators, Oil, Gas & Mining
Geological & Petroleum Technicians	Supervisors - Construction Trades & Extraction Workers
Geoscientists	Supervisors - Mechanics, Installers & Repairers
Industrial Engineers	Supervisors - Production & Operating Workers
Industrial Machinery Mechanics	Supervisors - Transportation & Vehicle Operators
Inspectors, Testers, Sorters, Samplers & Weighers	Telecommunications Line Installers & Repairers
Laborers & Freight, Stock & Material Movers	Truck Drivers, Heavy & Tractor-Trailer
Logging Equipment Operators	Welders, Cutters, Solderers & Brazers
Maintenance & Repair Workers	Welding, Soldering & Brazing Machine Operators
Mining & Geological Engineers	Wellhead Pumpers
Mobile Heavy Equipment Mechanics	