

MARCELLUS SHALE FAST FACTS

APRIL 2012 EDITION*

Each of the following sections is a quick snapshot of labor market information for Pennsylvania's Marcellus Shale (MS) related industries and related economic activity.

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*Note: Data sets from the Quarterly Census of Employment and Wages (QCEW) and the New Hires Program have been updated in this edition to 2011Q3 and 2011Q4, respectively. For both data sets, this is the most current data available. Because neither data set is seasonally adjusted, the same quarter must be used when analyzing growth over time, in order to ensure seasonal factors are not influencing employment change. Therefore, 2011Q3 QCEW data are compared to 2008Q3, and 2011Q4 New Hire data are compared to 4th quarter data for 2008, 2009, and 2010.

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CENTER FOR WORKFORCE INFORMATION & ANALYSIS

Release Date: 5-10-2012

CWIA-MS

BACKGROUND INFORMATION

The purpose of this Fast Facts publication is to provide the most current available data on Marcellus Shale related economic activity. While several data sources are utilized in this document, the primary source is the Quarterly Census of Employment and Wages (QCEW).

The QCEW program derives its data from quarterly tax reports submitted to the Pennsylvania Unemployment Compensation system by employers subject to the state's unemployment insurance laws. This includes 95 percent or more of all wage and salary civilian employment in Pennsylvania.

In 2009, CWIA used the North American Industry Classification System (NAICS) to define the Marcellus Shale related industries. Much of the information included in this document reflects data on a group of six industries identified as "core," and a group of 30 industries identified as "ancillary" for Marcellus Shale related activity (see notes section below).

As Marcellus Shale related activity develops further in Pennsylvania, additional industries may be added to the ancillary group, based on factors such as significant employment gains in an industry in a Marcellus Shale geographic region or identification of a group of companies in the same industry involved in Marcellus Shale related activity. Of the current 30 ancillary industries, nine have been added since the April 2011 edition of this publication (* denotes one of the new nine).

Also included in this publication are several additional data sources that capture employer demand and hiring activity. For an explanation of all data sources, please refer to the "Definitions" section on page 17.

The data in this edition include government (federal, state, and local) employment in all Marcellus Shale related industries because significant non-private employment is present in a number of these industries, most notably Highway, Street, & Bridge Construction; Engineering Services; Water Supply & Irrigation Systems; and Sewage Treatment Facilities.

Notes:

Marcellus Shale Core Industries (NAICS): Crude Petroleum & Natural Gas Extraction (21111); Natural Gas Liquid Extraction (21112); Drilling Oil & Gas Wells (21311); Support Activities for Oil & Gas Operations (21312); Oil & Gas Pipeline & Related Structures Construction (237120); and Pipeline Transportation of Natural Gas (486210).

Marcellus Shale Ancillary Industries (NAICS): Fossil Fuel Electric Power Generation (22112); Natural Gas Distribution (22120); Water Supply & Irrigation Systems (22130); Sewage Treatment Facilities (221320); Water & Sewer Line & Related Structures Construction (237110); Highway, Street, and Bridge Construction (237310)*; Nonresidential Site Preparation Contractors (238912); Petrochemical Manufacturing (325110)*; Industrial Gas Manufacturing (325120); Iron & Steel Mills & Ferroalloy Manufacturing (331110¹); Iron & Steel Pipe & Tube Manufacturing from Purchased Steel (331210); Mining Machinery & Equipment Manufacturing (333131); Oil & Gas Field Machinery & Equipment Manufacturing (333132); Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers (423810)*; Industrial Machinery and Equipment Merchant Wholesalers (423830)*; Industrial Supplies Merchant Wholesalers (423840)*; General Freight Trucking, Local (484110)*; Specialized Freight Trucking, Local (484220); Specialized Freight Trucking, Long-Distance (484230); Lessors of Other Real Property (531190); Construction, Mining & Forestry Machinery & Equipment Rental & Leasing (532412); Engineering Services (541330); Geophysical Surveying & Mapping Services (541360); Testing Laboratories (541380); Environmental Consulting Services (541620); Remediation Services (562910); Commercial & Industrial Machinery & Equipment Repair & Maintenance (811310); Administration of Air and Water Resource and Solid Waste Management Programs (924110)*; Administration of Conservation Programs (924120)*; Regulation and Administration of Communications, Electric, Gas, and Other Utilities (926130)*.

While the vast majority of Marcellus Shale related employment can be found in these industries, not all establishments in these industries are involved in Marcellus Shale. Asterisks indicate industries that have been added to the group of ancillary industries since the April 2011 edition of this publication.

¹NAICS 331110 replaced NAICS 331111 due to a change made by the Bureau of Labor Statistics – for an explanation of the implications of this change, please refer to page 19 in the Definitions Section.

PENNSYLVANIA

ECONOMIC BACKGROUND

- **Pennsylvania's seasonally adjusted unemployment rate for March 2012 was 7.5%.**
 - This was 0.7 percentage points below the U.S. rate of 8.2%.
 - O-T-M change was -0.1 percentage points.
 - O-T-Y change was -0.4 percentage points.
- **Pennsylvania's seasonally adjusted total nonfarm jobs for March 2012 was 5,728,400.**
 - O-T-M change was +7,800.
 - O-T-Y change was +45,700.
 - PA was still down 84,200 jobs since the start of the recession (December 2007).
- **Pennsylvania's new hire activity decreased slightly.**
 - There were 462,700 new hires across all industries in the 4th quarter of 2011.
 - This was a decrease of 300 (<1%) over 4th quarter 2010
- **Employer demand increased in Pennsylvania.**
 - 202,000 job ads were posted online in March 2012.
 - This was an increase of 24,000 from March 2011.
- **In Pennsylvania there were 2.6 unemployed persons for every online job posting (March 2012).**
 - The Pennsylvania rate was lower than the U.S. rate, which stood at 2.7.
 - The Pennsylvania rate was down from a peak of 4.8 unemployed per online job posting in late 2009.

O-T-M: Over-the-Month
O-T-Y: Over-the-Year

MARCELLUS SHALE RELATED

INDUSTRIES EMPLOYMENT:

SUMMARY STATISTICS

Employment (2008 Q3 to 2011 Q3):

- Core industries were up 17,000 (+154%).
- Ancillary industries were up 600 (+<1%).
- All industries declined 134,000 (-2%).
- 2011 Q3 Marcellus Shale related industries total employment was 239,000.

Establishments (2008 Q3 to 2011 Q3):

- 960 establishments were added (395 core, 565 ancillary).
- This represented 66.9% growth in the core industries and 4.6% growth in the ancillary industries; over the same time period, PA experienced 2.6% growth for all industries.
- Marcellus Shale related industries totaled 13,856 establishments in 2011 Q3

Wages (2010 Q4 through 2011 Q3):

- The average wage across all industries was \$47,233.
- The average wage in the core industries was \$80,328, which was approximately \$33,100 greater than the average for all industries.
- The average wage in the ancillary industries was \$64,060, which was approximately \$16,800 greater than the average for all industries.

New Hires (2008 Q4 to 2011 Q4):

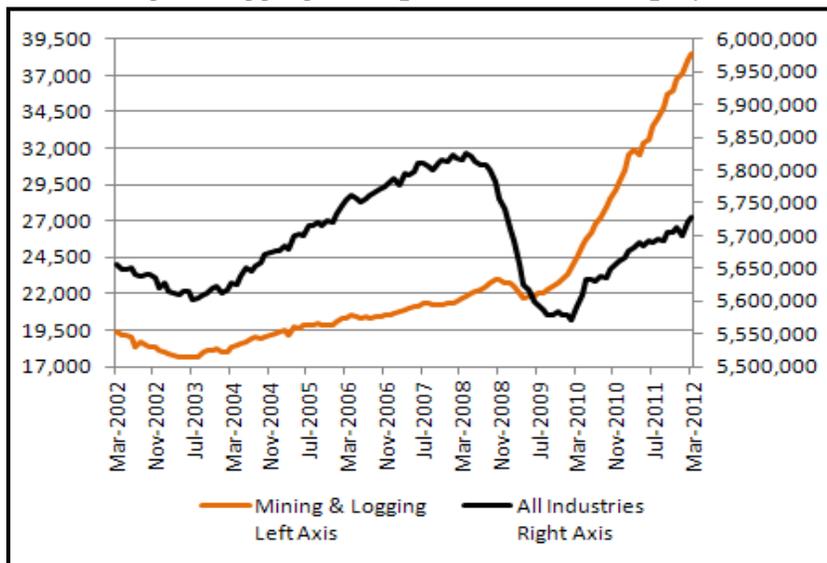
- Statewide new hires in the core industries were 193.9% higher in 2011Q4 than in 2008Q4.
- Statewide new hires in the ancillary industries were 40.4% higher in 2011Q4 than in 2008Q4.
- Statewide new hires across all industries were 0.1% lower in 2011Q4 than 2008Q4.

Online Job Postings (March 2012):

- There were 3,400 online job postings statewide in core and ancillary industries.

MINING JOBS VS. TOTAL JOBS IN PENNSYLVANIA

Mining & Logging¹ Compared to Total Employment



Current Employment Statistics (All data are seasonally adjusted)

- Total Pennsylvania Employment was 5,728,400 (March 2012).
 - O-T-M change was +7,800 (+0.1%).
 - O-T-Y change was +45,700 (+0.8%).
 - Change from 10 years ago was +72,500 (+1.3%).
- Mining & Logging Employment in Pennsylvania was 38,500.
 - O-T-M change was +500 (+1.3%).
 - O-T-Y change was +6,600 (+20.7%).
 - Change from 10 years ago was +19,100 (+98.5%).

O-T-M: Over-the-Month
O-T-Y: Over-the-Year

Points to Note

- 34.6% of the increase in mining & logging employment over the last decade occurred in the past 12 months; 73.3% occurred in the past two years.
- While total Pennsylvania employment has yet to reach pre-recession totals, employment in mining & logging industries reached its highest level in March 2012 (current data series began in 1990).

¹ Mining & Logging data are seasonally adjusted. Mining data, which are included in Mining & Logging, are not seasonally adjusted.

PENNSYLVANIA MARCELLUS SHALE RELATED INDUSTRIES DATA

Establishments & Employment in CWIA's Identified Core & Ancillary Marcellus Shale Related Industries

Core Industries		2008Q3		2011Q3 ¹		Vol. Change	
NAICS	Title	Est.	Emp.	Est.	Emp.	Est.	Emp.
211111	Crude Petroleum & Natural Gas Extraction	188	2,665	231	4,175	43	1,510
211112	Natural Gas Liquid Extraction	14	120	26	538	12	418
213111	Drilling Oil & Gas Wells	74	1,612	126	4,813	52	3,201
213112	Support Activities for Oil & Gas Operations	121	2,668	347	8,923	226	6,255
237120	Oil & Gas Pipeline & Related Structures	67	2,633	126	8,253	59	5,620
486210	Pipeline Transportation of Natural Gas	126	1,360	129	1,410	3	50
Totals		590	11,059	985	28,112	395	17,053
Ancillary Industries		2008Q3		2011Q3 ¹		Vol. Change	
NAICS	Title	Est.	Emp.	Est.	Emp.	Est.	Emp.
221112	Fossil Fuel Electric Power Generation	65	4,391	66	4,113	1	-278
221210	Natural Gas Distribution	152	4,850	168	5,000	16	150
221310	Water Supply & Irrigation Systems	368	6,872	378	6,980	10	108
221320	Sewage Treatment Facilities	473	4,444	484	4,448	11	4
237110	Water, Sewer, & Related Structure Const.	380	7,676	380	6,797	0	-879
237310	Highway, Street, & Bridge Construction	537	22,615	554	22,879	17	264
238912	Nonresidential Site Preparation Contractors	614	11,362	645	10,155	31	-1,207
325110	Petrochemical Manufacturing	4	942	5	587	1	-355
325120	Industrial Gas Manufacturing	30	1,737	35	1,487	5	-250
331110*	Iron & Steel Mills & Ferroalloy Mfg.	73	13,856	64	13,459	-9	-397
331210	Iron, Pipe, & Tube Mfg. from Prchsd. Steel	45	4,474	38	3,482	-7	-992
333131	Mining Machinery & Equipment Mfg.	24	3,410	23	3,353	-1	-57
333132	Oil & Gas Field Machinery & Equip. Mfg.	8	389	9	376	1	-13
423810	Const. & Mining Mach. Equip. Wholesalers	223	4,097	209	3,680	-14	-417
423830	Industrial Machinery & Equip. Wholesalers	1,023	12,455	958	12,096	-65	-359
423840	Industrial Supplies Merchant Wholesalers	311	3,293	344	3,677	33	384
484110	General Freight Trucking, Local	1,202	8,753	1,346	10,156	144	1,403
484220	Specialized Freight Trucking, Local	1,042	10,423	1,206	13,039	164	2,616
484230	Specialized Freight Trucking, Long-Distance	281	3,663	273	3,219	-8	-444
531190	Lessors of Other Real Estate Property	244	910	244	921	0	11
532412	Const., Mining, & Forestry Equip. Rental	106	2,162	152	2,979	46	817
541330	Engineering Services	2,459	43,421	2,565	43,514	106	93
541360	Geophysical Surveying & Mapping Services	57	278	52	266	-5	-12
541380	Testing Laboratories	403	7,474	404	7,853	1	379
541620	Environmental Consulting Services	468	3,105	500	3,429	32	324
562910	Remediation Services	225	2,861	254	3,140	29	279
811310	Comm. & Industrial Mach. & Equip. Repair	1,017	8,208	1,045	8,298	28	90
924110	Admin. of Air & Water Res. & Waste Mgmt.	107	5,183	108	4,886	1	-297
924120	Admin. of Conservation Programs	317	5,638	314	5,311	-3	-327
926130	Reg. & Admin. of Comm., Elec., Gas, & Util.	48	1,457	48	1,465	0	8
Totals		12,306	210,399	12,871	211,045	565	646

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- From 2008 Q3 to 2011 Q3, employment in core industries increased by 154.2%.
- Over the same period, employment in the ancillary industries was virtually unchanged.
- Employment across all industries decreased 2.4% (appx. 134,000) over the same time period.

¹2011 Q3 QCEW data are initial. These data may be revised upon release of QCEW 2011Q4 data.

Notes: These data are not seasonally adjusted. While most change was due to actual growth or decline, some movement may be due to seasonal patterns or administrative changes to data.

*NAICS definition implemented with 2011Q1 data. Please see NAICS Changes in "Definitions" section on page 19.

WORKFORCE INVESTMENT AREA MARCELLUS SHALE RELATED INDUSTRIES DATA¹

The tables below depict employment growth in the core and ancillary industries for Workforce Investment Areas (WIA) with substantial Marcellus Shale drilling activity.

Northern Tier	2008Q3	2011Q3 ¹	Vol. Change	Pct. Change
Core	99	2,531	2,432	2456.6%
Ancillary	1,788	3,689	3,689	106.3%

Southwest Corner	2008Q3	2011Q3 ¹	Vol. Change	Pct. Change
Core	649	2,973	2,324	358.1%
Ancillary	10,897	11,568	671	6.2%

Central	2008Q3	2011Q3 ¹	Vol. Change	Pct. Change
Core	114	2,064	1,950	1710.5%
Ancillary	9,869	11,503	1,634	16.6%

North Central	2008Q3	2011Q3 ¹	Vol. Change	Pct. Change
Core	2,240	2,818	578	25.8%
Ancillary	4,224	4,770	546	12.9%

Tri-County	2008Q3	2011Q3 ¹	Vol. Change	Pct. Change
Core	2,488	2,980	492	19.8%
Ancillary	9,611	9,501	-110	-1.1%

Westmoreland & Fayette	2008Q3	2011Q3 ¹	Vol. Change	Pct. Change
Core	479	1,257	778	162.4%
Ancillary	11,093	11,360	267	2.4%

6 WIA Total	2008Q3	2011Q3 ¹	Vol. Change	Pct. Change
Core	6,069	14,623	8,554	140.9%
Ancillary	47,482	52,391	4,909	10.3%

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- The Northern Tier WIA experienced the most rapid growth in Marcellus Shale core industries of all WIAs in terms of both volume and percentage; Northern Tier saw an increase of 2,432 employees from 2008Q3 to 2011Q3, for an increase of approximately 2450%.
- The Central WIA was second in terms of percentage employment growth with an employment increase of more than 1700%.
- The Southwest Corner WIA was second in terms of volume employment growth with an increase of 2,324 employees.
- Across all six WIAs employment in the core industries increased by 140.9%; ancillary employment increased by 10.3%.

¹2011 Q3 QCEW data are initial. These data may be revised upon release of QCEW 2011Q4 data.

Notes: These data are not seasonally adjusted. While most change was due to actual growth or decline, some movement may be due to seasonal patterns or administrative changes to data.

WAGES FOR MARCELLUS SHALE CORE & ANCILLARY INDUSTRIES¹

Core Industries Title	Average Wage ²
Crude Petroleum & Natural Gas Extraction	\$101,534
Natural Gas Liquid Extraction	\$97,562
Drilling Oil & Gas Wells	\$83,114
Support Activities for Oil & Gas Operations	\$66,541
Oil & Gas Pipeline & Related Structures Construction	\$80,055
Pipeline Transportation of Natural Gas	\$83,574
Average	\$80,328
Ancillary Industries Title	Average Wage ²
Fossil Fuel Electric Power Generation	\$110,450
Natural Gas Distribution	\$79,722
Water Supply & Irrigation Systems	\$54,819
Sewage Treatment Facilities	\$44,169
Water & Sewer Line & Related Structures Construction	\$64,712
Highway, Street, & Bridge Construction	\$55,259
Nonresidential Site Preparation Contractors	\$52,427
Petrochemical Manufacturing	\$74,405
Industrial Gas Manufacturing	\$83,842
Iron & Steel Mills & Ferroalloy Manufacturing*	\$74,371
Iron & Steel Pipe & Tube Manufacturing from Purchased Steel	\$61,392
Mining Machinery & Equipment Manufacturing	\$74,584
Oil & Gas Field Machinery & Equipment Manufacturing	\$68,382
Construction & Mining Machinery Equipment Wholesalers	\$61,003
Industrial Machinery & Equipment Merchant Wholesalers	\$66,985
Industrial Supplies Merchant Wholesalers	\$63,591
General Freight Trucking, Local	\$41,167
Specialized Freight Trucking, Local	\$45,897
Specialized Freight Trucking, Long-Distance	\$49,949
Lessors of Other Real Estate Property	\$38,737
Construction, Mining, & Forestry Machinery & Equip. Rental	\$76,233
Engineering Services	\$77,748
Geophysical Surveying & Mapping Services	\$53,412
Testing Laboratories	\$65,443
Environmental Consulting Services	\$66,760
Remediation Services	\$55,749
Commercial & Industrial Mach. & Equip. Repair & Maintenance	\$52,485
Admin. of Air & Water Res. & Solid Waste Mgmt. Programs	\$61,794
Admin. of Conservation Programs	\$49,587
Reg. & Admin. Of Communications, Electric, Gas, & Other Utils.	\$82,312
Average	\$64,060

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- The average wage across all industries for 2010Q4 through 2011Q3 was \$47,233.
- The average wage in the core industries was approximately \$33,100 greater than the average for all industries; the average wage in the ancillary industries was approximately \$16,800 higher.

¹ Average Wages for these industries were calculated by combining the most recent four quarters of available wage data; in this case 2010Q4 through 2011Q3.

²2011 Q3 QCEW data are initial. These data may be revised upon release of QCEW 2011Q4 data.

*NAICS definition implemented with 2011Q1 data. Please see NAICS Changes in "Definitions" section on page 19.

PENNSYLVANIA & WORKFORCE INVESTMENT AREA MARCELLUS SHALE RELATED INDUSTRIES ONLINE JOB POSTING ACTIVITY¹

Pennsylvania Statewide Online Job Postings

	Mar-2011	Mar-2012	Pct. Increase
Core Industries	238	237	-0.4%
Ancillary Industries	2,782	3,196	14.9%
Total All Industries²	178,065	202,278	13.6%

Select WIA Online Job Postings (core & ancillary combined)

WIA	Mar-2011	Mar-2012	Pct. Increase
Northern Tier	102	104	2.0%
Southwest Corner	105	127	21.0%
Central	123	191	55.3%
North Central	35	57	62.9%
Tri-County	59	74	25.4%
Westmoreland & Fayette	80	108	35.0%
Total	504	661	31.2%

- **Pennsylvania Online Job Postings**
 - Total job postings across all industries for Pennsylvania were 13.6% higher in March 2012 than in March 2011.
 - The increase seen in Marcellus Shale related industries (13.7%) slightly outpaced the overall trend in PA.
- **WIA Online Job Postings**
 - The largest percentage increase for job postings in the core and ancillary industries occurred in the North Central WIA with a rise of 62.9% from March 2011 to March 2012.
 - The Central WIA experienced the second highest level of job posting growth in March 2012, rising 55.3% over the year.
 - The six WIAs with a substantial amount of Marcellus Shale drilling activity saw online job postings for these industries increase by a combined 31.2% in March 2012 compared to March 2011.

¹ Job Postings are counted using Wanted Analytics' Help Wanted Online job posting spidering tool. Job posting increases should be viewed as an indication of **trend only**. For a complete explanation of this data set, please refer to the Definitions section of this document.

² Total Job postings in this table will not be comparable to total postings for January 2012 published in the February 2012 edition of the Pennsylvania Fast Facts, due to annual benchmarking revisions to the data.

STATEWIDE HIGH-PRIORITY OCCUPATIONS RELATED TO MARCELLUS SHALE

The occupations listed in the table below are found within the staffing patterns of Marcellus Shale related core and ancillary industries and have been identified as High Priority for Pennsylvania. High-Priority Occupations (HPOs) are identified as in demand by employers, have higher skills needs, and are most likely to provide family sustaining wages.

A Standard Occupational Code (SOC) is provided for each occupation. For a complete list of terms, please refer to the Staffing Pattern definition on page 18.

SOC Code	SOC Title	Average Annual Wage	Education Level
13-1051	Cost Estimators	\$60,120	Bachelor's degree
17-2112	Industrial Engineers	\$77,310	Bachelor's degree
41-4011	Sales Representatives, Scientific & Technical	\$87,120	Related work exper
43-3021	Billing & Posting Clerks & Machine Operators	\$32,200	Short-term OJT
43-3031	Bookkeeping, Accounting & Auditing Clerks	\$35,540	Moderate-term OJT
43-4051	Customer Service Representatives	\$36,620	Moderate-term OJT
43-5061	Production, Planning & Expediting Clerks	\$38,800	Moderate-term OJT
43-6014	Secretaries	\$30,650	Moderate-term OJT
43-9061	Office Clerks	\$28,760	Short-term OJT
47-1011	Supervisors - Construction Trades & Extraction Workers	\$64,630	Related work exper
47-2061	Construction Laborers	\$33,290	Moderate-term OJT
47-2073	Operating Engineers	\$43,740	Moderate-term OJT
47-2152	Plumbers, Pipefitters & Steamfitters	\$52,450	Long-term OJT
49-1011	Supervisors - Mechanics, Installers & Repairers	\$63,800	Related work exper
49-9041	Industrial Machinery Mechanics	\$44,940	Long-term OJT
49-9042	Maintenance & Repair Workers	\$36,390	Moderate-term OJT
49-9051	Electrical Power-Line Installers & Repairers	\$58,220	Long-term OJT
49-9052	Telecommunications Line Installers & Repairers	\$54,240	Long-term OJT
51-1011	Supervisors - Production & Operating Workers	\$55,800	Related work exper
51-4121	Welders, Cutters, Solderers & Brazers	\$36,250	Postsec award
51-9061	Inspectors, Testers, Sorters, Samplers & Weighers	\$36,540	Moderate-term OJT
53-1031	Supervisors - Transportation & Vehicle Operators	\$58,600	Related work exper
53-3032	Truck Drivers, Heavy & Tractor-Trailer	\$41,360	Short-term OJT
53-7062	Laborers & Freight, Stock & Material Movers	\$27,650	Short-term OJT

Source: *The Center for Workforce Information & Analysis*

Workforce development funding in the commonwealth may be available for training programs required to enter these occupations.

REGIONAL HIGH-PRIORITY OCCUPATIONS RELATED TO MARCELLUS SHALE

The occupations listed in the table below are found within the staffing patterns of Marcellus Shale related core industries and have been identified as High-Priority for certain Workforce Investment Areas (WIAs).¹ High Priority Occupations (HPOs) are identified as in demand by employers, have higher skills needs, and are most likely to provide family sustaining wages.

A Standard Occupational Code (SOC) is provided for each occupation. For a complete list of terms, please refer to the Staffing Pattern definition on page 18.

SOC Code	SOC Title	Average Annual Wage	Education Level
17-2151	Mining & Geological Engineers	\$64,010	Bachelor's degree
17-3023	Electrical & Electronic Engineering Technicians	\$54,040	Associate degree
17-3025	Environmental Engineering Technicians	\$46,790	Associate degree
19-2042	Geoscientists	\$67,860	Master's degree
19-4041	Geological & Petroleum Technicians	\$49,700	Associate degree
45-4022	Logging Equipment Operators	\$24,480	Moderate-term OJT
47-5011	Derrick Operators, Oil & Gas	\$41,920	Moderate-term OJT
47-5012	Rotary Drill Operators, Oil & Gas	\$41,550	Moderate-term OJT
47-5013	Service Unit Operators, Oil, Gas & Mining	\$38,530	Moderate-term OJT
47-5071	Roustabouts, Oil & Gas	\$30,490	Moderate-term OJT
49-3042	Mobile Heavy Equipment Mechanics	\$44,850	Long-term OJT
51-4122	Welding, Soldering & Brazing Machine Setters	\$37,250	Postsec award
53-7071	Gas Compressor & Gas Pumping Station Operators	\$51,620	Moderate-term OJT
53-7072	Pump Operators	\$42,200	Moderate-term OJT
53-7073	Wellhead Pumpers	\$37,010	Moderate-term OJT

Source: The Center for Workforce Information & Analysis

Each of the occupations in this table has been identified as an HPO in one or more of the following WIAs: Central, North Central, Northern Tier, Northwest, Southwest Corner, Three Rivers, Tri-County, West Central, and Westmoreland-Fayette.

Bolded occupations are HPOs in each WIA listed above. For a complete list of HPOs by Local Workforce Investment Area, please refer to:

<http://www.paworkstats.state.pa.us/gsipub/index.asp?docid=504>

Workforce development funding in the commonwealth may be available for training programs required to enter these occupations.

¹ These occupations were added to Local Workforce Investment Areas HPO lists through the HPO petition process.

PENNSYLVANIA MARCELLUS SHALE RELATED INDUSTRIES NEW HIRES

Core Industries	Volume of New Hires by Quarter				Change 2008Q4 - 2011Q4	
	2008Q4	2009Q4	2010Q4	2011Q4	Vol.	Pct.
Title						
Crude Petroleum & Natural Gas Extraction	127	105	225	251	124	97.6%
Natural Gas Liquid Extraction	21	20	32	73	52	247.6%
Drilling Oil & Gas Wells	197	273	377	539	342	173.6%
Support Activities for Oil & Gas Operations	321	224	999	1,168	847	263.9%
Oil & Gas Pipeline & Related Structures	59	65	127	148	89	150.8%
Pipeline Transportation of Natural Gas	17	15	2	2	-15	-88.2%
Total	742	702	1,762	2,181	1,439	193.9%
Ancillary Industries	Volume of New Hires by Quarter				Change 2008Q4 - 2011Q4	
Title	2008Q4	2009Q4	2010Q4	2011Q4	Vol.	Pct.
Fossil Fuel Electric Power Generation	12	8	7	9	-3	-25.0%
Natural Gas Distribution	137	73	109	132	-5	-3.6%
Water Supply & Irrigation Systems	31	33	48	42	11	35.5%
Sewage Treatment Facilities	54	36	33	35	-19	-35.2%
Water, Sewer Line & Related Structures	220	236	280	360	140	63.6%
Highway, Street, & Bridge Construction	1,196	1,187	1,067	1,100	-96	-8.0%
Nonresidential Site Preparation Contractors	356	371	495	479	123	34.6%
Petrochemical Manufacturing	18	17	16	8	-10	-55.6%
Industrial Gas Manufacturing	17	18	13	22	5	29.4%
Iron & Steel Mills & Ferroalloy Mfg.*	194	451	355	439	245	126.3%
Iron, Steel Pipe, Tube Mfg. from Prchsd. Steel	124	117	190	199	75	60.5%
Mining Machinery & Equipment Mfg.	173	68	172	231	58	33.5%
Oil & Gas Field Machinery & Equipment	1	5	8	12	11	1100.0%
Const. & Mining Mach. Equip. Wholesalers	141	126	106	123	-18	-12.8%
Industrial Mach. & Equip. Wholesalers	363	268	472	447	84	23.1%
Industrial Supplies Merchant Wholesalers	103	160	229	160	57	55.3%
General Freight Trucking, Local	350	374	460	528	178	50.9%
Specialized Freight Trucking, Local	370	314	684	826	456	123.2%
Specialized Freight Trucking, Long-	137	70	137	178	41	29.9%
Lessors of Other Real Estate Property	11	13	25	12	1	9.1%
Const., Mining, & Forestry Mach. & Equip.	140	112	236	233	93	66.4%
Engineering Services	2,285	2,486	2,748	3,512	1,227	53.7%
Geophysical Surveying & Mapping Services	11	6	3	7	-4	-36.4%
Testing Laboratories	235	213	483	455	220	93.6%
Environmental Consulting Services	144	146	205	200	56	38.9%
Remediation Services	289	327	322	340	51	17.6%
Commercial & Industrial Mach. & Equip.	316	266	383	342	26	8.2%
Admin. Of Air & Water Res. & Waste	5	2	2	5	0	0.0%
Admin. of Conservation Programs	6	2	10	8	2	33.3%
Reg. & Admin. of Comm., Elec., Gas &	0	0	0	0	0	N/A
Totals	7,439	7,505	9,298	10,444	3,005	40.4%

- In 2011 Q4 there were 2,181 New Hires in the Marcellus Shale related core industries. This was 193.9% higher than 2008 Q4
- In 2011 Q4 there were 10,444 New Hires in the Marcellus Shale related ancillary industries. This was 40.4% higher than 2008 Q4.
- Across all industries in Pennsylvania, total New Hires in 2011 Q4 were 0.1% lower than in 2008 Q4

Note: In every economy there is job creation and job destruction every month and the result is employment change. New hires are linked to job creation; however, an increase in new hires does not directly equate to an increase in the total employment count. The new hires count is simply an indication of hiring activity in an industry. Separations, in the form of layoffs or quits, are linked to job destruction and account for the other half of the employment change equation. The balance of hires and separations result in the employment change.

*NAICS definition implemented with 2011Q1 data. Please see NAICS Changes in "Definitions" section on page 19.

WORKFORCE INVESTMENT AREA

MARCELLUS SHALE RELATED

INDUSTRIES NEW HIRES

The tables below depict the number of new hires in the core and ancillary industries for WIAs with substantial Marcellus Shale drilling activity during the fourth quarter of each year from 2008 to 2011. Volume change and percent change are both based on 2008Q4 to 2011Q4 calculations.

Northern Tier	2008Q4	2009Q4	2010Q4	2011Q4	Vol. Change	Pct. Change
Core	1	16	120	175	174	17400.0%
Ancillary	9	77	134	199	190	2111.1%

Southwest Corner	2008Q4	2009Q4	2010Q4	2011Q4	Vol. Change	Pct. Change
Core	25	28	244	314	289	1156.0%
Ancillary	204	264	180	376	172	84.3%

Central	2008Q4	2009Q4	2010Q4	2011Q4	Vol. Change	Pct. Change
Core	0	6	175	168	168	N/A
Ancillary	107	136	239	300	193	180.4%

North Central	2008Q4	2009Q4	2010Q4	2011Q4	Vol. Change	Pct. Change
Core	43	191	494	482	439	1020.9%
Ancillary	52	35	110	150	98	188.5%

Tri-County	2008Q4	2009Q4	2010Q4	2011Q4	Vol. Change	Pct. Change
Core	86	65	111	233	147	170.9%
Ancillary	244	316	332	240	-4	-1.6%

Westmoreland & Fayette	2008Q4	2009Q4	2010Q4	2011Q4	Vol. Change	Pct. Change
Core	9	9	33	14	5	55.6%
Ancillary	199	190	291	464	265	133.2%

6 WIA Total	2008Q4	2009Q4	2010Q4	2011Q4	Vol. Change	Pct. Change
Core	164	315	1,177	1,386	1,222	745.1%
Ancillary	815	1,018	1,286	1,729	914	112.1%

- Across these six WIAs, there were more than eight times as many new hires in the Marcellus Shale related core industries in 2011Q4 than in 2008Q4; there were 112.1% more new hires in the ancillary industries in 2011Q4 than in 2008Q4.
- All six WIAs had more new hires in the core industries in 2011Q4 than in 2008Q4; five of six WIAs saw more new hire activity in the ancillary industries as well over that time period (Tri-County experienced a slight decrease)
- Northern Tier WIA and Central WIA had a combined one new hire in the core industries in 2008Q4, but combined for 342 core new hires in 2011Q4.

QUARTERLY WORKFORCE INDICATORS

(based on the U.S. Census Bureau, Local Employment Dynamics (LED))

Percentage of Industry¹ Employment by Age Group (2011Q1)

Northern Tier	14-24	25-34	35-44	45-54	55+
All industry groups	13.6%	18.4%	21.1%	25.6%	22.4%
2111 Oil and Gas Extraction	***	24.6%	23.1%	32.3%	***
2131 Support Activities for Mining	24.1%	34.6%	19.6%	15.6%	6.0%
2371 Utility System Construction	12.4%	25.4%	17.5%	27.7%	16.4%
4862 Pipeline Transportation of Natural Gas	***	***	33.3%	41.7%	***

Southwest Corner	14-24	25-34	35-44	45-54	55+
All industry groups	12.0%	19.4%	20.3%	24.9%	23.5%
2111 Oil and Gas Extraction	***	30.4%	23.5%	25.6%	12.7%
2131 Support Activities for Mining	19.5%	36.0%	22.5%	14.3%	7.8%
2371 Utility System Construction	9.7%	22.7%	25.0%	25.2%	17.5%
4862 Pipeline Transportation of Natural Gas	***	14.7%	22.7%	38.0%	***

Central	14-24	25-34	35-44	45-54	55+
All industry groups	12.6%	18.9%	21.0%	25.2%	22.2%
2111 Oil and Gas Extraction	***	27.7%	26.8%	24.1%	5.4%
2131 Support Activities for Mining	16.2%	36.5%	25.1%	15.7%	6.4%
2371 Utility System Construction	***	19.5%	21.7%	27.4%	22.4%
4862 Pipeline Transportation of Natural Gas	***	15.6%	18.8%	34.4%	21.9%

North Central	14-24	25-34	35-44	45-54	55+
All industry groups	12.1%	18.2%	21.5%	26.1%	22.0%
2111 Oil and Gas Extraction	7.8%	18.5%	20.2%	30.8%	22.8%
2131 Support Activities for Mining	14.8%	34.3%	22.8%	19.7%	8.3%
2371 Utility System Construction	24.3%	26.1%	20.7%	19.5%	9.7%
4862 Pipeline Transportation of Natural Gas	***	12.2%	18.9%	39.0%	26.2%

Tri-County	14-24	25-34	35-44	45-54	55+
All industry groups	13.2%	19.5%	20.4%	25.0%	21.8%
2111 Oil and Gas Extraction	***	27.0%	19.5%	30.7%	18.5%
2131 Support Activities for Mining	11.0%	29.2%	23.1%	23.4%	13.2%
2371 Utility System Construction	8.0%	26.4%	20.3%	27.1%	17.8%
4862 Pipeline Transportation of Natural Gas	***	52.6%	15.8%	26.3%	***

Westmoreland & Fayette	14-24	25-34	35-44	45-54	55+
All industry groups	12.6%	18.3%	20.5%	25.5%	23.1%
2111 Oil and Gas Extraction	***	30.4%	20.1%	28.4%	12.5%
2131 Support Activities for Mining	***	34.2%	25.4%	18.7%	9.0%
2371 Utility System Construction	***	25.0%	23.2%	27.6%	15.1%
4862 Pipeline Transportation of Natural Gas	***	18.4%	17.1%	42.1%	21.1%

*** Indicates that data cannot be disclosed due to confidentiality restrictions or data quality standards

- Workers in the Marcellus Shale related industry groups tended, on average, to be younger than the total across all industries.
- The percentage of workers in core related industry groups aged 55 and over was smaller than found across all industries.

¹ Local Employment Dynamics data are only available at the 4-digit NAICS level. While these industry groups contain some employment from non-Marcellus Shale related core industries, they help to provide an understanding of the industries' employment composition by age.

DEFINITIONS:

LABOR FORCE STATISTICS* - Source: Pennsylvania Local Area Unemployment Statistics (LAUS).

The labor force and unemployment data are based on the same concepts and definitions as those used for the official national estimates obtained from the Current Population Survey (CPS). The Local Area Unemployment Statistics (LAUS) program measures employment and unemployment on a place-of-residence basis and produces estimates using equations based on regression techniques. This method utilizes data from several sources, including the CPS, the Current Employment Statistics (CES) program, and state unemployment insurance (UI) programs. The LAUS program does not produce estimates for any demographic groups.

Unemployment Rate: The number of unemployed as a percent of the labor force.

Unemployment: All persons aged 16 years and older who had no employment during the reference week (contains the 12th day of the month), were available for work (except for temporary illness), and had made specific efforts to find employment sometime during the four-week period ending with the reference week. Persons who were waiting to be recalled to jobs from which they had been laid off need not to have been looking for work to be classified as unemployed.

Employment: All persons who, during the week which includes the 12th day of the month, (a) did any work as paid employees, worked in their own businesses or professions or on their own farm, or worked 15 hours or more as unpaid workers in enterprises operated by members of their families, or (b) were not working but who had jobs from which they were temporarily absent. Each employed person is counted only once, even if the person holds more than one job. Included are the self-employed, unpaid family workers, agricultural workers, and private household workers, who are excluded by the CES survey.

Labor Force: All persons either working or looking for work or classified as employed or unemployed.

JOBS* - Source: Pennsylvania Department of Labor & Industry, Current Employment Statistics (CES).

Each month the CES program surveys about 140,000 national businesses and government agencies in order to provide detailed industry data on employment, hours, and earnings of workers on non-farm payrolls. This is a collaborative effort between BLS and the states. CES produces a count of jobs, not of people.

Nonfarm Jobs: The total number of persons on establishment payrolls employed full or part time who received pay for any part of the pay period that includes the 12th day of the month.

Temporary and intermittent employees are included, as are any employees who are on paid sick leave, on paid holiday, or who work during only part of the specified pay period. A striking employee who only works a small portion of the survey period, and is paid, would be included as employed under the CES definitions. Persons on the payroll of more than one establishment are counted in each establishment. Data exclude proprietors, self-employed, unpaid family or volunteer workers, farm workers, and domestic workers. Persons on layoff, strike, or leave without pay for the entire pay period, or who have not yet reported for work are not counted as employed. Government employment covers only civilian employees.

*** THESE DATA ARE SEASONALLY ADJUSTED:** Seasonal adjustment removes the change in employment that is due to normal seasonal hiring or layoffs (holidays, weather, etc.), thus leaving an over-the-month change that reflects only employment changes due to trend and irregular movements.

DEFINITIONS:

QUARTERLY WORKFORCE INDICATORS – Source: U.S. Census Bureau, Local Employment Dynamics

The Quarterly Workforce Indicators (QWI) are a set of economic indicators that can be queried by different levels of geography as well as by industry, gender, and age of workers. The QWI are built upon wage records in the Unemployment Insurance (UI) system and information from state Quarterly Census of Employment and Wages (QCEW) data.

QUARTERLY CENSUS OF EMPLOYMENT AND WAGES - Source: The Pennsylvania Department of Labor & Industry, Quarterly Census of Employment and Wages

Employment: Employment data include all employment covered under the Pennsylvania Unemployment Compensation program for each of the three months in the quarter. The employment count represents the number of full-time and part-time employees who worked during or received pay for the payroll period including the 12th of the month. The employment totals for each month are averaged for the quarter employment count. Included are persons on paid vacations or on paid sick leave. Workers temporarily earning no wages due to labor-management disputes, layoffs or other reasons are not reported as employed. Persons on the payroll of more than one employer during the same reference week are reported more than once.

Establishment: The location of a certain economic activity, such as a factory, store, office, or mine, that produces goods or services. It is typically at a single physical location and engaged in one, or predominantly one, type of economic activity. An employer may have one or more establishments.

Wages: Total wages include total compensation paid during a calendar quarter (including bonuses). Average wages are calculated by dividing total wages for a quarter by average employment in that quarter.

STAFFING PATTERNS – Source: Pennsylvania Department of Labor & Industry

Staffing Pattern: A listing of the occupations most commonly found within a particular industry. This information comes from the biennial *Long-Term Occupational Employment Projections* data.

Average Annual Wage: The mean annual wage earned by workers in the occupation, assuming 40 hours per week, 52 weeks a year. Wage data is derived from the annual *Occupational Employment Statistics (OES)* survey.

Educational Attainment: The Bureau of Labor Statistics (BLS) identifies 11 categories that have been used in career planning. These categories describe the most significant postsecondary education or training pathway to employment for workers in that occupation.

Educational Attainment Level Abbreviations:

- **Short-term or Moderate-term OJT** – basic tasks and skills are learned through a period of on-the-job training lasting up to one year.
- **Long-term training** – knowledge and skills are developed through years of on-the-job training or formal classroom instruction.
- **Related work exper** – training is gained through hands-on work in a similar occupation
- **Postsecondary award** – training is gained through a vocational training program.
- **Associate degree** – degree completed after two years of full-time schooling beyond high school
- **Bachelor's degree** – degree completed after four years of full-time schooling beyond high school
- **Degree plus exper** – a four-year bachelor's degree plus experience gained through hands-on experience
- **Masters, Doctoral, or Professional degree** – training at the college or university level beyond a four-year bachelor's degree.

