Marcellus Shale

FAST FACTS

December 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.

Section	Page
Background Information	2-3
MS Employment Summary	4
Jobs Data	5
Industry Data	6-7
Industry Wages	8
Job Posting Activity	9
High-Priority Occupations	10-11

Section	Page
New Hires	12-13
Quarterly Workforce Indicators	14
Information on ShaleNET Training Program	15
Unemployment Rate Map	16
Definitions	17-19
Marcellus Shale Formation Map	20

*Note: Data sets from the Quarterly Census of Employment and Wages (QCEW) and the New Hires Program in this edition are for 2012Q2 and 2012Q3, 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, 2012Q2 QCEW data are compared to 2009Q2, and 2012Q3 New Hire data are compared to 3rd quarter data for 2009, 2010, and 2011.

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pennsylvania
DEPARTMENT OF LABOR & INDUSTRY

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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 (211111); Natural Gas Liquid Extraction (211112); Drilling Oil & Gas Wells (213111); Support Activities for Oil & Gas Operations (213112); Oil & Gas Pipeline & Related Structures Construction (237120); and Pipeline Transportation of Natural Gas (486210).

Marcellus Shale Ancillary Industries (NAICS): Fossil Fuel Electric Power Generation (221112); Natural Gas Distribution (221210); Water Supply & Irrigation Systems (221310); 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 (331110[1]); 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.

[1]NAICS 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 November 2012 was 7.8%.**
  - This was higher than the U.S. rate of 7.7%.
  - O-T-M change was -0.3 percentage points.
  - O-T-Y change was 0.0 percentage points.

- **Pennsylvania's seasonally adjusted total nonfarm jobs for November 2012 was 5,751,400.**
  - O-T-M change was +1,900.
  - O-T-Y change was +47,300.
  - PA was still down 61,200 jobs since the start of the recession (December 2007).

- **Pennsylvania's new hire activity increased.**
  - There were 619,100 new hires across all industries in the 3rd quarter of 2012.
  - This was an increase of 39,700 (+7.0%) from the 3rd quarter of 2011.

- **Employer demand increased slightly in Pennsylvania.**
  - 179,900 job ads were posted online in November 2012.
  - This was an increase of 6,400 from November 2011.

- **In Pennsylvania there were 2.8 unemployed persons for every online job posting November 2012.**
  - The Pennsylvania rate was higher than the U.S. rate, which stood at 2.5.
  - 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 (2009Q2 to 2012Q2):

- Core industries were up 19,945 (+182.8%).
- Ancillary industries were up 16,037 (+8.2%).
- All industries increased 111,651 (+2.0%).
- 2012Q2 Marcellus Shale related industries total employment was 243,116.

Establishments (2009Q2 to 2012Q2):

- 1,220 establishments were added (399 core, 821 ancillary).
- This represented 60.1% growth in the core industries and 6.7% growth in the ancillary industries; over the same time period, PA experienced 4.5% growth for all industries.
- Marcellus Shale related industries totaled 14,152 establishments in 2012 Q2.

Wages (2011Q3 through 2012Q2):

- The average wage across all industries was $48,087.
- The average wage in the core industries was $89,116, which was approximately $41,029 greater than the average for all industries.
- The average wage in the ancillary industries was $65,122, which was approximately $17,035 greater than the average for all industries.

New Hires (2009Q3 to 2012Q3):

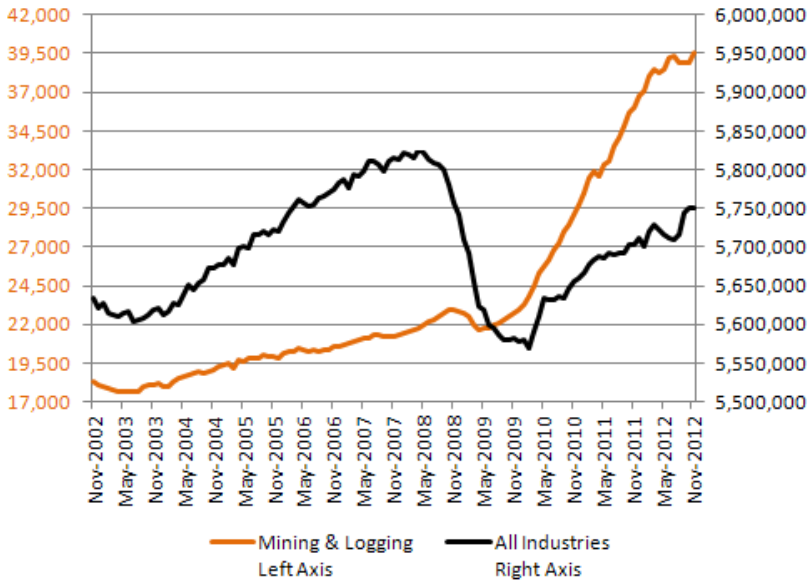
- Statewide new hires in the core industries were 122.7% higher in 2012Q3 than in 2009Q3.
- Statewide new hires in the ancillary industries were 30.0% higher in 2012Q3 than in 2009Q3.
- Statewide new hires across all industries were 11.3% higher in 2012Q3 than in 2009Q3.
- In 2010Q2, 71% of new hires in the core industries were PA residents; in 2011Q2, this increased to 74%. 2012Q2 research is underway.

Online Job Postings (November 2012):

- There were 2,954 online job postings statewide in core and ancillary industries.

Mining Jobs vs. Total Jobs in Pennsylvania

Mining & Logging[1] Compared to Total Employment



Current Employment Statistics *(All data are seasonally adjusted)*

- Total Pennsylvania jobs were 5,751,400 (November 2012).
  O-T-M change was +1,900 (0.0%).
  O-T-Y change was +47,300 (+0.8%).
  Change from 10 years ago was +117,000 (+2.1%).
- Mining & Logging Employment in Pennsylvania was 39,600.
  O-T-M change was 700 (+1.8%).
  O-T-Y change was +3,600 (+10.0%).
  Change from 10 years ago was +21,300 (+116.4%).

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

Points to Note

- 16.9% of the increase in mining & logging employment over the last decade occurred in the past 12 months; 49.3% 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 November 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		2009Q2		2012Q2[1]		Vol. Change	
NAICS	Title	Est.	Emp.	Est.	Emp.	Est.	Emp.
211111	Crude Petroleum & Natural Gas Extraction	204	2,589	235	4,732	31	2,143
211112	Natural Gas Liquid Extraction	15	146	22	571	7	425
213111	Drilling Oil & Gas Wells	94	1,691	120	4,325	26	2,634
213112	Support Activities for Oil & Gas Operations	156	2,742	401	11,807	245	9,065
237120	Oil & Gas Pipeline & Related Structures	67	2,385	154	7,839	87	5,454
486210	Pipeline Transportation of Natural Gas	128	1,356	131	1,580	3	224
Totals		664	10,909	1,063	30,854	399	19,945
Ancillary Industries		2009Q2		2012Q2[1]		Vol. Change	
NAICS	Title	Est.	Emp.	Est.	Emp.	Est.	Emp.
221112	Fossil Fuel Electric Power Generation	65	4,371	66	3,907	1	-464
221210	Natural Gas Distribution	154	4,806	171	5,279	17	472
221310	Water Supply & Irrigation Systems	372	6,851	384	6,870	12	19
221320	Sewage Treatment Facilities	475	4,408	493	4,415	18	7
237110	Water, Sewer, & Related Structure Const.	378	6,586	372	6,327	-6	-259
237310	Highway, Street, & Bridge Construction	535	21,423	539	22,282	4	859
238912	Nonresidential Site Preparation Contractors	632	9,330	664	9,515	32	185
325110	Petrochemical Manufacturing	3	479	5	600	2	121
325120	Industrial Gas Manufacturing	30	1,590	33	1,488	3	-102
331110*	Iron & Steel Mills & Ferroalloy Mfg.	63	12,449	61	13,615	-2	1,166
331210	Iron, Pipe, & Tube Mfg. from Prchsd. Steel	41	3,522	36	3,612	-5	90
333131	Mining Machinery & Equipment Mfg.	23	3,305	22	3,629	-1	324
333132	Oil & Gas Field Machinery & Equip. Mfg.	8	312	10	433	2	121
423810	Const. & Mining Mach. Equip. Wholesalers	218	3,812	205	3,691	-13	-121
423830	Industrial Machinery & Equip. Wholesalers	991	11,423	955	12,512	-36	1,090
423840	Industrial Supplies Merchant Wholesalers	317	3,152	352	3,725	35	574
484110	General Freight Trucking, Local	1,190	8,280	1,406	10,653	216	2,373
484220	Specialized Freight Trucking, Local	1,033	9,672	1,293	13,356	260	3,683
484230	Specialized Freight Trucking, Long-Distance	269	3,468	282	3,548	13	80
531190	Lessors of Other Real Estate Property	238	815	247	881	9	66
532412	Const., Mining, & Forestry Equip. Rental	118	2,201	164	3,331	46	1,130
541330	Engineering Services	2,464	41,935	2,589	43,976	125	2,040
541360	Geophysical Surveying & Mapping Services	52	224	58	331	6	106
541380	Testing Laboratories	388	7,294	407	9,001	19	1,707
541620	Environmental Consulting Services	475	3,025	478	3,497	3	472
562910	Remediation Services	233	2,593	254	2,970	21	378
811310	Comm. & Industrial Mach. & Equip. Repair	1,034	7,996	1,069	8,240	35	244
924110	Admin. of Air & Water Res. & Waste Mgmt.	102	4,936	108	4,789	6	-147
924120	Admin. of Conservation Programs	318	4,478	317	4,381	-1	-97
926130	Reg. & Admin. of Comm., Elec., Gas, & Util.	49	1,488	49	1,410	0	-79
Totals		12,268	196,225	13,089	212,262	821	16,037

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

- From 2009Q2 to 2012Q2, employment in Core industries increased by 182.8%.
- Over the same period, employment in the Ancillary industries was up 8.2%.
- Employment across all industries increased 2.0% (appx. 111,651) over the same time period.

[1]2012Q2 QCEW data are initial. These data may be revised upon release of QCEW 2012Q3 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 Data[1]

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	2009Q2	2012Q2[1]	Vol. Change	Pct. Change
Core	106	2,492	2,386	2250.9%
Ancillary	1,836	4,346	2,510	136.7%

Southwest Corner	2009Q2	2012Q2[1]	Vol. Change	Pct. Change
Core	713	4,721	4,008	562.1%
Ancillary	10,251	12,152	1,901	18.5%

Central	2009Q2	2012Q2[1]	Vol. Change	Pct. Change
Core	140	2,589	2,449	1749.3%
Ancillary	9,465	11,248	1,783	18.8%

North Central	2009Q2	2012Q2[1]	Vol. Change	Pct. Change
Core	1,902	3,013	1,111	58.4%
Ancillary	3,888	4,879	991	25.5%

Tri-County	2009Q2	2012Q2[1]	Vol. Change	Pct. Change
Core	2,515	3,386	871	34.6%
Ancillary	9,152	9,605	453	4.9%

Westmoreland & Fayette	2009Q2	2012Q2[1]	Vol. Change	Pct. Change
Core	528	1,458	930	176.1%
Ancillary	10,676	11,449	773	7.2%

6 WIA Total	2009Q2	2012Q2[1]	Vol. Change	Pct. Change
Core	**5,904**	**17,659**	**11,755**	**199.1%**
Ancillary	**45,268**	**53,679**	**8,411**	**18.6%**

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

- Southwest Corner WIA experienced the largest volume increase in Marcellus Shale Core Industries, with an increase of 4,008 employees; Central WIA was second with a volume increase of 2,449 employees. Northern Tier WIA experienced the largest percentage increase in Core industry employment equal to 2250.9%; second was Central WIA with an increase of 1749.3%.
- Northern Tier WIA experienced the most rapid growth in Marcellus Shale Ancillary industries in terms of both volume and percentage with an increase of 2,510 employees; this represents a 136.7% increase.
- Across all six WIAs, employment in the Core industries increased by 199.1%; Ancillary employment increased by 18.6%.

[1]2012Q2 QCEW data are initial. These data may be revised upon release of QCEW 2012Q3 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 and Ancillary Industries[1]

Core Industries Title	Average Wage[2]
Crude Petroleum & Natural Gas Extraction	$104,198
Natural Gas Liquid Extraction	$101,482
Drilling Oil & Gas Wells	$85,275
Support Activities for Oil & Gas Operations	$70,271
Oil & Gas Pipeline & Related Structures Construction	$87,728
Pipeline Transportation of Natural Gas	$85,743
Average	**$89,116**
Ancillary Industries Title	**Average Wage[2]**
Fossil Fuel Electric Power Generation	$113,903
Natural Gas Distribution	$77,962
Water Supply & Irrigation Systems	$55,937
Sewage Treatment Facilities	$44,970
Water & Sewer Line & Related Structures Construction	$67,281
Highway, Street, & Bridge Construction	$55,830
Nonresidential Site Preparation Contractors	$53,200
Petrochemical Manufacturing	$77,153
Industrial Gas Manufacturing	$90,951
Iron & Steel Mills & Ferroalloy Manufacturing*	$76,354
Iron & Steel Pipe & Tube Manufacturing from Purchased Steel	$63,585
Mining Machinery & Equipment Manufacturing	$69,865
Oil & Gas Field Machinery & Equipment Manufacturing	$80,668
Construction & Mining Machinery Equipment Wholesalers	$65,105
Industrial Machinery & Equipment Merchant Wholesalers	$68,471
Industrial Supplies Merchant Wholesalers	$62,242
General Freight Trucking, Local	$42,289
Specialized Freight Trucking, Local	$46,903
Specialized Freight Trucking, Long-Distance	$51,860
Lessors of Other Real Estate Property	$35,799
Construction, Mining, & Forestry Machinery & Equip. Rental	$78,915
Engineering Services	$78,656
Geophysical Surveying & Mapping Services	$57,623
Testing Laboratories	$65,716
Environmental Consulting Services	$67,819
Remediation Services	$57,277
Commercial & Industrial Mach. & Equip. Repair & Maintenance	$53,062
Admin. of Air & Water Res. & Solid Waste Mgmt. Programs	$62,293
Admin. of Conservation Programs	$49,992
Reg. & Admin. Of Communications, Electric, Gas, & Other Utils.	$81,974
Average	**$65,122**

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

- The average wage across all industries for 2011Q3 through 2012Q2 was $48,087.
- The average wage in the core industries was approximately $41,029 greater than the average for all industries; the average wage in the ancillary industries was approximately $17,035 higher.

1 Average Wages for these industries were calculated by combining the most recent four quarters of available wage data; in this case 2011Q3 through 2012Q2.
[2]2012 Q2 QCEW data are initial. These data may be revised upon release of QCEW 2012Q3 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 Activity[1]

Pennsylvania Statewide Online Job Postings

	November-2011	November-2012	Pct. Change
Core Industries	309	192	-37.9%
Ancillary Industries	3,484	2,762	-20.7%
Total All Industries[2]	173,424	179,864	3.7%

Select WIA Online Job Postings (core & ancillary combined)

WIA	November-2011	November-2012	Pct. Change
Northern Tier	111	43	-61.3%
Southwest Corner	156	143	-8.3%
Central	226	140	-38.1%
North Central	97	57	-41.2%
Tri-County	106	79	-25.5%
Westmoreland & Fayette	100	117	17.0%
Total	796	579	-27.3%

- **Pennsylvania Online Job Postings**
  - Total job postings across all industries for Pennsylvania were 3.7% higher in November 2012 than in November 2011.
  - The decrease seen in statewide Marcellus Shale related industries was 22.1%.
- **WIA Online Job Postings**
  - Aside from Westmoreland/Fayette, all of the WIAs with substantial Marcellus Shale drilling activity experienced a decrease in job posting activity over the year. Ads in Westmoreland/Fayette rose 17.0%.
  - The Northern Tier WIA experienced the largest over the year decrease in Marcellus Shale related job posting activity, declining by 61.3%.
  - The six WIAs with a substantial amount of Marcellus Shale drilling activity saw online job postings for these industries decrease by a combined 27.3% in November 2012 compared to November 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 may not be equal to total postings for November 2012 published in the December 2012 edition of the Pennsylvania Fast Facts, due to continuous updates to the data.

2012 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
13-2011	Accountants & Auditors	$70,650	Bachelor's degree
17-3011	Architectural & Civil Drafters	$46,740	Associate degree
43-3031	Bookkeeping, Accounting & Auditing Clerks	$36,140	Moderate-term OJT
49-3031	Bus, Truck & Diesel Engine Mechanics	$41,300	Long-term training
17-2051	Civil Engineers	$77,600	Bachelor's degree
47-4011	Construction & Building Inspectors	$48,100	HS diploma plus expr
43-4051	Customer Service Representatives	$34,030	Short-term OJT
49-9051	Electrical Power-Line Installers & Repairers	$59,080	Long-term training
11-1021	General & Operations Managers	$111,730	Associate plus expr
53-3032	Heavy & Tractor-Trailer Truck Drivers	$41,920	HS diploma plus expr
49-9041	Industrial Machinery Mechanics	$45,570	Long-term training
51-9061	Inspectors, Testers & Sorters	$37,770	Moderate-term OJT
53-3033	Light Truck/Delivery Drivers	$31,950	Short-term OJT
49-9071	Maintenance & Repair Workers, General	$36,630	Moderate-term OJT
17-2141	Mechanical Engineers	$79,300	Bachelor's degree
43-9061	Office Clerks, General	$29,440	Short-term OJT
47-2073	Operating Engineers	$45,510	Moderate-term OJT
47-2152	Plumbers, Pipefitters & Steamfitters	$52,740	Long-term training
47-5012	Rotary Drill Operators, Oil & Gas	$46,080	Moderate-term OJT
47-5071	Roustabouts, Oil & Gas	$35,930	Moderate-term OJT
41-4012	Sales Representatives	$64,760	Moderate-term OJT
43-6014	Secretaries	$31,750	Short-term OJT
47-5013	Service Unit Operators, Oil, Gas & Mining	$48,170	Moderate-term OJT
47-1011	Supervisors - Construction/Extraction Workers	$66,410	HS diploma plus expr
53-1031	Supervisors - Transportation & Vehicle Oprs	$58,360	HS diploma plus expr
49-9052	Telecommunications Line Installers/Repairers	$56,030	Long-term training
51-4121	Welders, Cutters, Solderers & Brazers	$37,530	Moderate-term OJT
53-7073	Wellhead Pumpers	$36,430	Moderate-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.

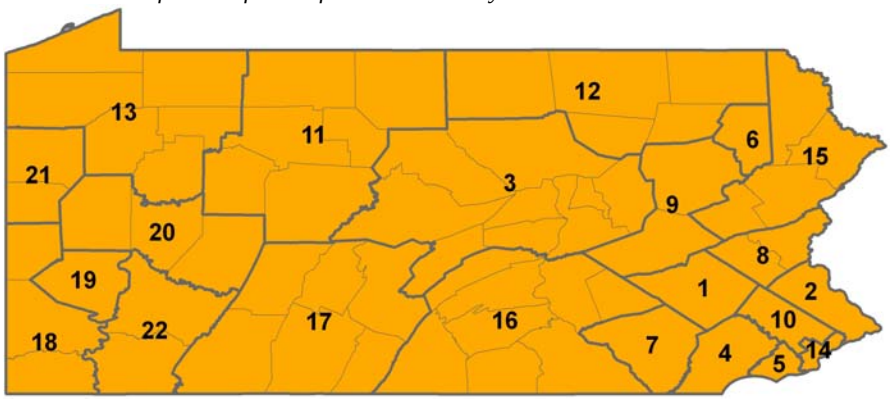
2012 Regional High-Priority Occupations Related to Marcellus Shale

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	Education Level	HPO in WIA Numbers
47-2061	Construction Laborers	Short-term OJT	1,2,3,4,5,7,10,14
47-5011	Derrick Operators, Oil & Gas	Short-term OJT	3,11,12,13,18,19,20,21,22
17-2071	Electrical Engineers	Bachelor's degree	1,2,4,5,7,8,10,14
53-7032	Excavating & Loading Machine Oprs	HS diploma plus expr	8
53-7071	Gas Compressor Oprs	Moderate-term OJT	3,12
49-3042	Mobile Heavy Equipment Mechanics	Long-term training	3,12
53-7072	Pump Operators	Moderate-term OJT	3,12

Source: The Center for Workforce Information & Analysis



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.

WIA #	WIA Name	WIA #	WIA Name
1	Berks County WIA	12	Northern Tier WIA
2	Bucks County WIA	13	Northwest WIA
3	Central WIA	14	Philadelphia County WIA
4	Chester County WIA	15	Pocono Counties WIA
5	Delaware County WIA	16	South Central WIA
6	Lackawanna County WIA	17	Southern Alleghenies WIA
7	Lancaster County WIA	18	Southwest Corner WIA
8	Lehigh Valley WIA	19	Three Rivers WIA
9	Luzerne-Schuylkill Counties WIA	20	Tri-County WIA
10	Montgomery County WIA	21	West Central WIA
11	North Central WIA	22	Westmoreland-Fayette Counties WIA

Pennsylvania Marcellus Shale Related Industries New Hires

Core Industries	Volume of New Hires by Quarter				Change 2009Q3 - 2012Q3	
Title	2009Q3	2010Q3	2011Q3	2012Q3	Vol.	Pct.
Crude Petroleum & Natural Gas Extraction	116	239	346	193	77	66.4%
Natural Gas Liquid Extraction	37	18	70	59	22	59.5%
Drilling Oil & Gas Wells	230	395	448	154	-76	-33.0%
Support Activities for Oil & Gas Operations	148	918	1,203	477	329	222.3%
Oil & Gas Pipeline & Related Structures	89	131	202	523	434	487.6%
Pipeline Transportation of Natural Gas	15	7	11	8	-7	-46.7%
Total	635	1,708	2,280	1,414	779	122.7%
Ancillary Industries	**Volume of New Hires by Quarter**				**Change 2009Q3 - 2012Q3**	
Title	2009Q3	2010Q3	2011Q3	2012Q3	Vol.	Pct.
Fossil Fuel Electric Power Generation	21	18	34	13	-8	-38.1%
Natural Gas Distribution	89	98	103	223	134	150.6%
Water Supply & Irrigation Systems	39	35	56	41	2	5.1%
Sewage Treatment Facilities	60	33	43	57	-3	-5.0%
Water, Sewer Line & Related Structures	433	434	377	326	-107	-24.7%
Highway, Street, & Bridge Construction	2,032	2,090	2,252	1,957	-75	-3.7%
Nonresidential Site Preparation	516	626	615	622	106	20.5%
Petrochemical Manufacturing	4	27	9	5	1	25.0%
Industrial Gas Manufacturing	14	21	25	23	9	64.3%
Iron & Steel Mills & Ferroalloy Mfg.*	307	326	433	286	-21	-6.8%
Iron, Steel Pipe, Tube Mfg. from Prchsd. Steel	131	137	158	95	-36	-27.5%
Mining Machinery & Equipment Mfg.	55	200	315	223	168	305.5%
Oil & Gas Field Machinery & Equipment	3	16	7	11	8	266.7%
Const. & Mining Mach. Equip. Wholesalers	119	128	172	106	-13	-10.9%
Industrial Mach. & Equip. Wholesalers	345	442	494	610	265	76.8%
Industrial Supplies Merchant Wholesalers	100	277	283	242	142	142.0%
General Freight Trucking, Local	409	631	607	542	133	32.5%
Specialized Freight Trucking, Local	324	660	967	759	435	134.3%
Specialized Freight Trucking, Long-	138	162	156	355	217	157.2%
Lessors of Other Real Estate Property	19	27	26	42	23	121.1%
Const., Mining, & Forestry Mach. & Equip.	201	164	230	272	71	35.3%
Engineering Services	2,876	3,376	3,793	3,783	907	31.5%
Geophysical Surveying & Mapping Services	7	6	8	27	20	285.7%
Testing Laboratories	275	561	524	554	279	101.5%
Environmental Consulting Services	133	238	248	211	78	58.6%
Remediation Services	347	378	503	258	-89	-25.6%
Commercial & Industrial Mach. & Equip.	250	337	361	375	125	50.0%
Admin. Of Air & Water Res. & Waste	2	3	5	4	2	100.0%
Admin. of Conservation Programs	5	4	13	9	4	80.0%
Reg. & Admin. of Comm., Elec., Gas &	0	0	0	0	0	N/A
Totals	9,254	11,455	12,817	12,031	2,777	30.0%

- In 2012Q3 there were 1,414 New Hires in the Marcellus Shale related core industries. This was 122.7% higher than 2009Q3.
- In 2012Q3 there were 12,031 New Hires in the Marcellus Shale related ancillary industries. This was 30.0% higher than 2009Q3.
- Across all industries in Pennsylvania, total New Hires in 2012Q3 were 11.3% higher than in 2009Q3.

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 third quarter of each year from 2009 to 2012. Volume change and percent change are both based on 2009Q3 to 2012Q3 calculations.

Northern Tier	2009Q3	2010Q3	2011Q3	2012Q3	Vol. Change	Pct. Change
Core	0	90	153	208	208	N/A
Ancillary	42	75	201	135	93	221.4%

Southwest Corner	2009Q3	2010Q3	2011Q3	2012Q3	Vol. Change	Pct. Change
Core	18	161	350	160	142	788.9%
Ancillary	209	332	363	368	159	76.1%

Central	2009Q3	2010Q3	2011Q3	2012Q3	Vol. Change	Pct. Change
Core	4	172	228	87	83	2,075%
Ancillary	179	283	437	278	99	55.3%

North Central	2009Q3	2010Q3	2011Q3	2012Q3	Vol. Change	Pct. Change
Core	157	403	378	66	-91	-58%
Ancillary	68	135	157	70	2	2.9%

Tri-County	2009Q3	2010Q3	2011Q3	2012Q3	Vol. Change	Pct. Change
Core	78	148	243	98	20	25.6%
Ancillary	419	371	569	428	9	2.1%

Westmoreland & Fayette	2009Q3	2010Q3	2011Q3	2012Q3	Vol. Change	Pct. Change
Core	9	36	42	20	11	122.2%
Ancillary	402	534	663	722	320	79.6%

6 WIA Total	2009Q3	2010Q3	2011Q3	2012Q3	Vol. Change	Pct. Change
Core	266	1,010	1,394	639	373	140.2%
Ancillary	1,319	1,730	2,390	2,001	682	51.7%

- Across these six WIAs, there were more than twice as many new hires in the Marcellus Shale related core industries in 2012Q3 than in 2009Q3; there were 51.7% more new hires in the ancillary industries in 2012Q3 than in 2009Q3.
- All WIAs except North Central had more new hires in both the core and ancillary industries in 2012Q3 than in 2009Q3; North Central core industry new hires dropped by 91, or 58%.
- Northern Tier WIA, Central WIA and Westmoreland & Fayette WIA had a combined 13 new hires in the core industries in 2009Q3, but combined for 315 core new hires in 2012Q3, an increase of 2,323.1%.

Quarterly Workforce Indicators

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

Percentage of Industry[1] Employment by Age Group (2011Q4)

Northern Tier	14-24	25-34	35-44	45-54	55+
All industry groups	13.9%	19.1%	20.7%	24.8%	21.5%
2111 Oil and Gas Extraction	***	38.4%	22.4%	22.2%	10.8%
2131 Support Activities for Mining	20.0%	34.0%	20.8%	17.7%	7.6%
2371 Utility System Construction	***	28.7%	18.0%	23.0%	15.8%
4862 Pipeline Transportation of Natural Gas	***	17.3%	23.1%	36.5%	***

Southwest Corner	14-24	25-34	35-44	45-54	55+
All industry groups	12.1%	19.6%	19.7%	24.5%	24.1%
2111 Oil and Gas Extraction	***	33.8%	21.9%	20.8%	10.4%
2131 Support Activities for Mining	17.2%	39.8%	21.9%	14.0%	7.2%
2371 Utility System Construction	12.2%	22.2%	23.4%	24.7%	17.5%
4862 Pipeline Transportation of Natural Gas	***	18.1%	21.1%	34.9%	***

Central	14-24	25-34	35-44	45-54	55+
All industry groups	12.9%	19.0%	20.4%	24.8%	22.9%
2111 Oil and Gas Extraction	***	35.7%	25.5%	13.4%	***
2131 Support Activities for Mining	16.8%	33.3%	26.1%	16.5%	7.4%
2371 Utility System Construction	10.5%	22.4%	24.4%	24.6%	18.0%
4862 Pipeline Transportation of Natural Gas	***	17.4%	23.9%	34.9%	***

North Central	14-24	25-34	35-44	45-54	55+
All industry groups	12.1%	18.3%	21.2%	25.7%	22.7%
2111 Oil and Gas Extraction	5.0%	23.7%	22.5%	26.8%	22.0%
2131 Support Activities for Mining	15.4%	31.2%	21.5%	19.7%	12.0%
2371 Utility System Construction	23.9%	25.1%	22.5%	18.7%	9.8%
4862 Pipeline Transportation of Natural Gas	***	15.0%	17.6%	38.2%	26.2%

Tri-County	14-24	25-34	35-44	45-54	55+
All industry groups	12.8%	19.7%	20.1%	24.8%	22.6%
2111 Oil and Gas Extraction	7.9%	27.1%	19.4%	27.3%	18.2%
2131 Support Activities for Mining	13.6%	31.5%	22.6%	20.6%	11.9%
2371 Utility System Construction	***	17.4%	20.8%	31.2%	26.0%
4862 Pipeline Transportation of Natural Gas	***	50.0%	13.3%	23.3%	6.7%

Westmoreland & Fayette	14-24	25-34	35-44	45-54	55+
All industry groups	12.7%	18.4%	19.9%	24.9%	24.1%
2111 Oil and Gas Extraction	5.2%	21.6%	17.2%	32.8%	22.4%
2131 Support Activities for Mining	14.0%	29.8%	26.2%	18.5%	11.6%
2371 Utility System Construction	***	23.6%	24.6%	25.8%	16.0%
4862 Pipeline Transportation of Natural Gas	4.7%	22.5%	20.9%	32.6%	20.2%

**** 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.

ShaleNET Training and Job Placement Data[1]:

(As provided by the Allegheny Conference on Community Development)

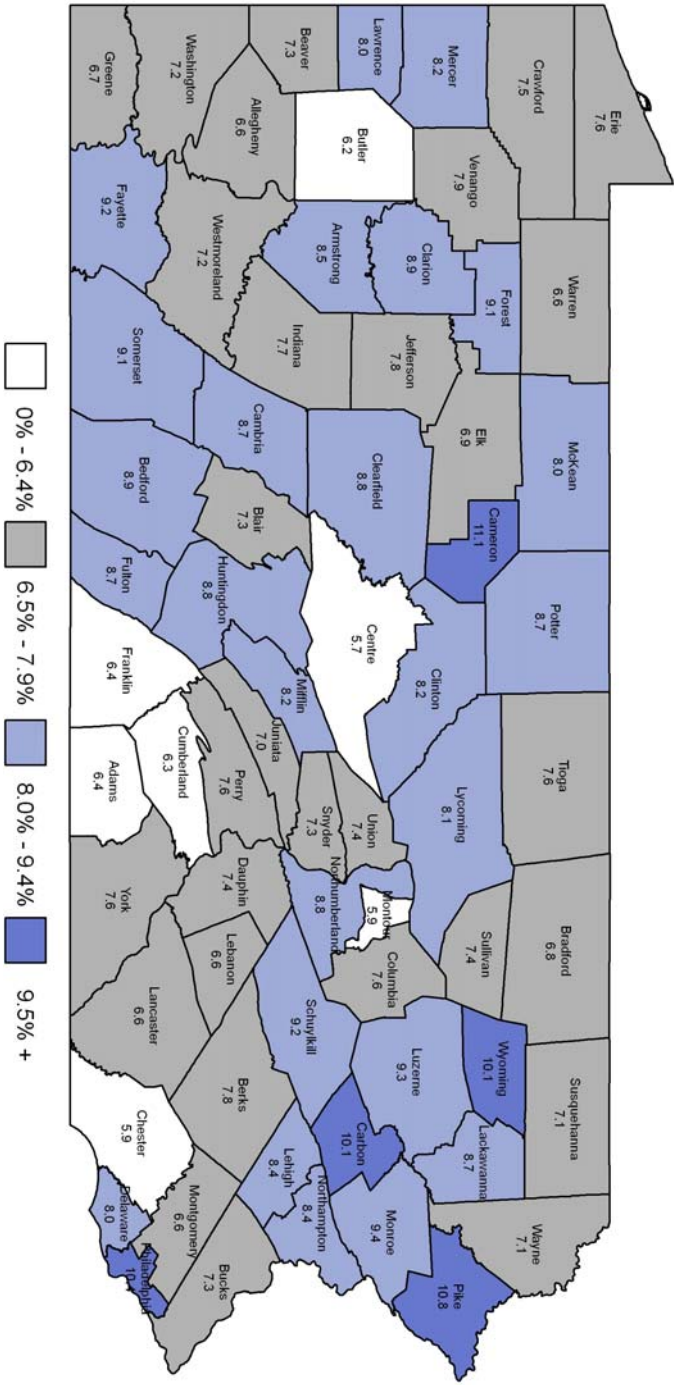
ShaleNET is a three-year, $4.9 million grant from the United States Department of Labor, Employment and Training Administration. The mission of the grant is to design a comprehensive recruitment, training, placement, and retention program for high priority occupations in the natural gas drilling and production industry throughout the Marcellus shale footprint. For more information visit **www.shalenet.org**.

June 2010- December 2011	
Participants being served by ShaleNET	8,616
Beginning education and training activities	3,827
Completing training activities and education	2,292
Completed training with degree/certification	590
Employed	1,034

Top job placement for ShaleNET graduates, October 2010-January 2012:	
1	Roustabout
2	Floor hand
3	Truck driver
4	Mechanic
5	Casing specialist

[1]Definitions for these indicators are as follows: *Participants served by ShaleNET* equals the total number of people who have registered with ShaleNET.org through the Talent Match System. *Beginning education and training activities* measures those participants who have begun ShaleNET training. *Completed training with degree/certificate* measures participants who have finished ShaleNET training. *Employed* represents training participants who have gained employment during or after ShaleNET training, through on-the-job training grants, as well as, those participants who have found jobs with the help of ShaleNET and Pennsylvania CareerLink.

Pennsylvania Unemployment Rates by County November 2012



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) provides information about entry-level education, related work experience, and typical on-the-job training requirements for each of several hundreds of occupations.

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. A high school diploma may be required.
- Long-term training – a high school diploma and at least one year of on-the-job training or an apprenticeship.
- HS diploma plus experience – a high school diploma and training gained through hands-on work in a similar occupation.
- Postsecondary training – training is gained through a postsecondary training program. Some period of related work experience may be required.
- Associate degree – degree completed after two years of full-time schooling beyond high school. Some period of related work experience may be required.
- Bachelor's degree – degree completed after four years of full-time schooling beyond high school. Some period of related work experience may be required.
- Master's Degree – degree completed after two years of full-time schooling beyond a bachelor's degree. Some period of related work experience may be required.
- Doctoral, or Professional degree – degree programs requiring 3-6 years of education at the college or university level beyond a four-year bachelor's degree.

Definitions:

New hires - *Source: The Pennsylvania Department of Labor & Industry*

New Hire Reporting is a process by which employers report information on all employees hired on or after January 1, 1998 to locate non-custodial parents, establish child support orders, or enforce existing orders. Company and individual data are confidential and cannot be reported on. However, the data can be aggregated to show where and in what industries hiring is taking place as an indication of which sectors of the economy are experiencing growth or decline. Approximately sixty percent of all new hires are captured. New hire counts by industry are an indication of trend only.

Help Wanted Online Ads - *Source: The Conference Board Help Wanted OnLine™ data set*

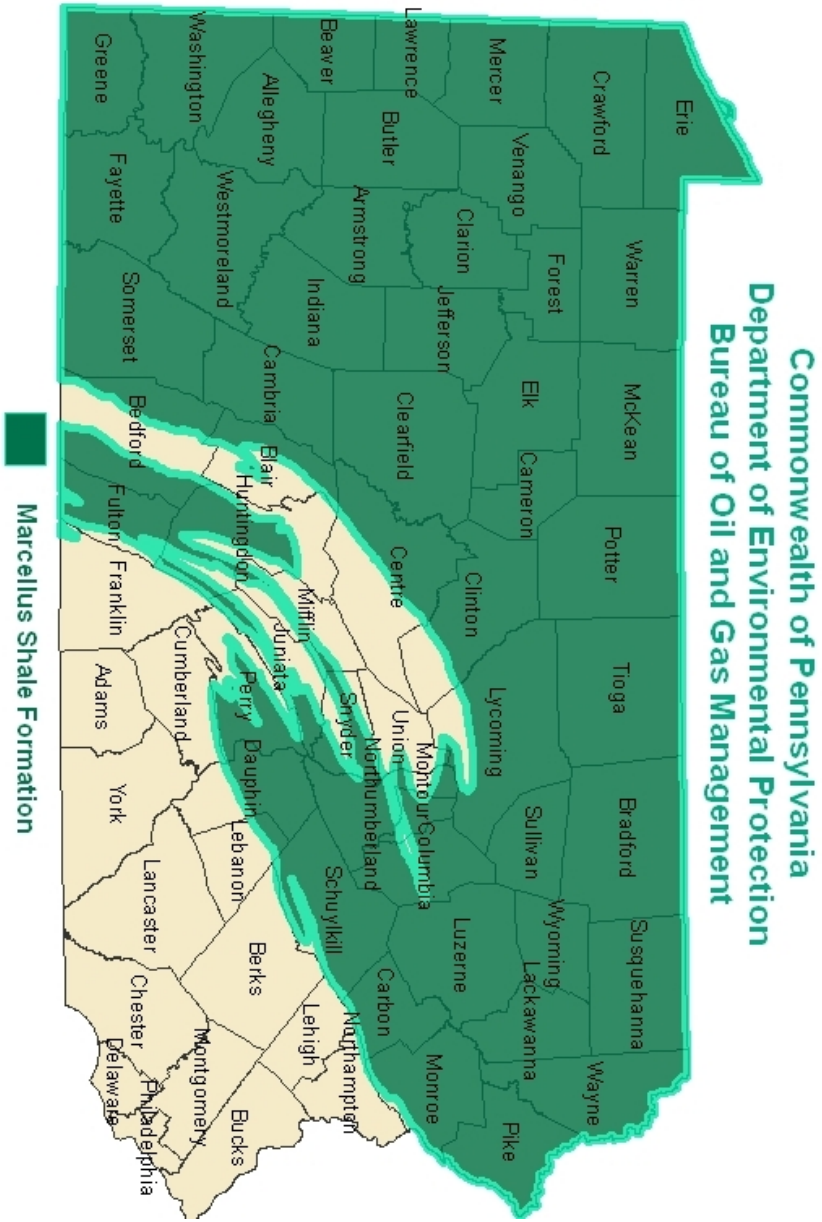
The Conference Board Help Wanted OnLine data set provides real-time insight into the employment marketplace through the world's largest database of online job ads. Jobs ads can be classified by industry, occupation, employer, and geographic area. Data are analyzed for employment trends and to forecast economic conditions. The underlying data for The Conference Board HWOL are provided by Wanted Technologies Corporation.

Map of Marcellus Shale Formation - *Source: Department of Environmental Protection*

Workforce Investment Area (WIA)

A WIA is labor market area that is usually a group of contiguous counties, where employment, training and educational services are provided. Established through the Workforce Investment Act to provide services for dislocated workers and other eligible individuals, Pennsylvania's 22 WIAs are based on common geographic and economic factors.

NAICS Changes

The North American Industry Classification System (NAICS), established in 1997, is reviewed for potential revisions every five years. The latest revision (2012) was implemented by BLS in the QCEW program with the release of 1st quarter 2011 data. As part of this revision, the NAICS code of only one Marcellus Shale related industry was impacted: NAICS 331111 (Iron & Steel Mills). The NAICS 2012 structure eliminated NAICS 331111, combining it with NAICS 331112 (Electrometallurgical ferroalloy product manufacturing) to form NAICS 331110 (Iron & Steel Mills and Ferroalloy Manufacturing). To account for this change, the Marcellus Shale ancillary industry list was modified to change NAICS 331111 to NAICS 331110, and all ancillary industry data will now include NAICS 331110. **To retain comparability, for time periods prior to 2011, data for NAICS 331111 & 331112 will be combined and shown under NAICS 331110.**

Marcellus Shale Formation