Ohio Department of Job and Family Services

2013 ANNUAL Ohio Shale Report



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A Message from Director Dungey

Shale oil and gas drilling brought significant opportunities for Ohio workers in 2013, especially those in the eastern part of the state. Employment in core shale-related industries grew more than 34 percent from 2012. The number of core shale-related businesses increased by more than 12 percent, and the number of shale-related online job postings rose more than 47 percent.

For the most part, these are jobs with few entry-level requirements and better than average salaries. Of the 38 key shale-related occupations, 20 require only a high school diploma or less and up to a year of on-the-job training. Others require work experience and postsecondary education – and Ohio's four-year and community colleges stand ready to fill that need, as well. Opportunities exist in everything from trucking to industrial engineering, from customer service to environmental science. Median wages for these jobs range from \$20,000 to more than \$64,000 a year.

This is very good news for Ohioans, Ohio's communities and the state as a whole. Ohio is fortunate to have this resource that can help us continue our steady recovery from the national recession.

In partnership with the U.S. Department of Labor's Bureau of Labor Statistics, the Ohio Department of Job and Family Services' Bureau of Labor Market Information collects and analyzes shale-related employment data for Ohio. The pages that follow provide a synopsis of this information for 2013. For more frequent reports, see Ohio Shale: Quarterly Economic Trends for Ohio Oil and Gas Industries. Both the quarterly and annual reports can be found at ohiolmi.com.

Copilia C. Dungey

Cynthia C. Dungey, Director Ohio Department of Job and Family Services

Introduction

Ohio Revised Code section 6301.12 calls for the publication of an annual report assessing the direct and indirect economic impact of businesses engaged in the production of horizontal wells. This report fulfills that requirement by presenting available economic data on businesses engaged in the production of oil and gas wells in Ohio. This report focuses on employment in core and ancillary shale industries. It does not encompass all economic activity related to Ohio's shale industry. For example, increased business and employment at restaurants and retail stores located near shale development is not reflected in this report. Much of the information in this report reflects data for a group of five industries defined as "core" shale-related industries and a group of 30 industries defined as "ancillary" shale-related industries. While the vast majority of shale-related employment can be found in these industries, not all business establishments in these industries are involved in shale-related activity. For those that are, not all of their products and services and, therefore, their employment are necessarily linked to shale-related economic activity. This is particularly true for the ancillary industries.

This report shows annual employment and business establishment changes in core and ancillary shale-related industries from 2012 to 2013. These data include government employment (federal, state and local) in all shale-related industries because significant non-private employment is present in a number of these industries, most notably: highway, street and bridge construction; engineering services; water supply and irrigation systems; and sewage treatment facilities. This report also shows worker demand, key occupations in shale-related industries, residency status of new hires in core and ancillary industries, and average wages, and it offers a summary of regional workforce development plans. The final section summarizes the impact of these factors.

Core Shale-Related Industry Employment

Employment in core shale-related industries grew significantly from 2012 to 2013. Overall employment in the core industries grew 34.8 percent, an increase of 2,860 jobs. This was well above the core industries at the national level, which grew 4.4 percent from 2012 to 2013.

Calculating the change in employment for specific core industries between 2012 and 2013 is difficult because some business establishments were reclassified to different industries after a routine review of industry classifications. For that reason, some jobs counted in one industry in 2012 were counted in a different industry in 2013. This change was partially responsible for the changes in employment in both the crude petroleum and natural gas extraction and pipeline transportation of natural gas industries, and likely had some impact on the other core industries as well. See Figure 1 for details about employment growth in the core shale-related industries.

NAICS	Title	Average Employment, 2012	Average Employment, 2013	Numeric Change	Percent Change
211111	Crude Petroleum and Natural Gas Extraction	2,895	1,690	-1,205	-41.6%
211112	Natural Gas Liquid Extraction	191	308	117	61.3%
213111	Drilling Oil and Gas Wells	661	1,000	339	51.3%
213112	Support Activities for Oil and Gas Operations	1,644	2,517	873	53.1%
237120	Oil and Gas Pipeline Construction	2,498	5,241	2,743	109.8%
486210	Pipeline Transportation of Natural Gas	321	314	-7	-2.2%
	Core Industries Totals	8,210	11,070	2,860	34.8%

Figure 1. Core Shale-Related Industry Annual Employment Averages and Year-to-Year Change

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Business Establishments in Core Industries

The number of Ohio business establishments in the core shale-related industries grew from 2012 to 2013. Over the year, the number of establishments increased by 79, a 12.1 percent increase. The largest absolute increase was in support activities for oil and gas operations, with an increase of 33 establishments (16.2 percent). The largest proportional increase was in natural gas liquid extraction, with a 30.4 percent increase from 2012 to 2013. However, this industry is small; the increase was only four establishments. See Figure 2 for details about establishment growth in the core shale-related industries.

Figure 2. Core Shale-Related Industry	Annual Establishment Averages and
Year-to-Year Change	

NAICS	Title	Average Estblishments, 2012	Average Establishments, 2013	Numeric Change	Percent Change
211111	Crude Petroleum and Natural Gas Extraction	198	208	10	5.1%
211112	Natural Gas Liquid Extraction	13	17	4	30.8%
213111	Drilling Oil and Gas Wells	93	95	2	2.2%
213112	Support Activities for Oil and Gas Operations	204	237	33	16.2%
237120	Oil and Gas Pipeline Construction	106	135	29	27.4%
486210	Pipeline Transportation of Natural Gas	37	38	1	2.7%
	Core Industries Totals	651	730	79	12.1%

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Ancillary Shale-Related Industry Employment

Ancillary shale-related industries are indirectly involved with shale oil and gas well drilling and development. These industries provide products or support services to the core shale-related industries and to many other industries as well. Employment in ancillary shale-related industries grew by 0.8 percent from 2012 to 2013, an increase of 1,392 jobs.¹ Remediation services had the largest numeric and percent increase: 1,053 additional jobs, or an increase of 38.6 percent. This includes such things as site cleanup and reclamation and removal of toxic materials. See Figure 3 for details about employment growth in the 30 ancillary shale-related industries.

Business Establishments in Ancillary Industries

The number of business establishments in ancillary shale-related industries decreased a modest 0.1 percent from 2102 to 2013, a decline of 19 establishments. A few ancillary industries saw increases in the number of establishments. Long-distance specialized freight gained 15 establishments, and local general freight trucking gained 14. See Figure 4 for details.

¹ Because of data suppression at the national level, it is not possible to report comparable national growth.

Figure 3. Ancillary Shale-Related Industry Annual Employment Averages and Year-to-Year Change

		Average	Average		
		Employment,	Employment,	Numeric	Percent
NAICS	Title	2012	2013	Change	Change
221112	Fossil fuel electric power generation	4,600	4,313	-287	-6.2%
221210	Natural gas distribution	4,097	4,106	9	0.2%
221310	Water supply and irrigation systems	6,061	5,940	-121	-2.0%
221320	Sewage treatment facilities	3,799	3,855	56	1.5%
237110	Water and sewer line system construction	4,937	4,853	-84	-1.7%
237310	Highway, street, and bridge construction	15,063	15,401	338	2.2%
238912	Nonresidential site preparation contractors	5,298	5,296	-2	0.0%
325110	Petrochemical manufacturing	308	324	16	5.2%
325120	Industrial gas manufacturing	778	754	-24	-3.1%
331110	Iron, steel mills and ferroalloy manufacturing	10,053	9,187	-866	-8.6%
331210	Iron, steel pipe and tube from purchased steel	3,159	2,766	-393	-12.4%
333131	Mining machinery and equipment manufacturing	496	473	-23	-4.6%
333132	Oil and gas field machinery and equipment	355	357	2	0.6%
423810	Construction equipment merchant wholesalers	3,112	3,257	145	4.7%
423830	Industrial machinery merchant wholesalers	16,014	16,354	340	2.1%
423840	Industrial supplies merchant wholesalers	4,722	4,738	16	0.3%
484110	General freight trucking, local	12,529	12,544	15	0.1%
484220	Other specialized trucking, local	7,391	7,428	37	0.5%
484230	Other specialized trucking, long-distance	4,912	5,402	490	10.0%
531190	Lessors of other real estate property	899	906	7	0.8%
532412	Other heavy machinery rental and leasing	1,537	1,956	419	27.3%
541330	Engineering services	28,655	28,492	-163	-0.6%
541360	Geophysical surveying and mapping services	264	331	67	25.4%
541380	Testing laboratories	5,743	6,060	317	5.5%
541620	Environmental consulting services	1,703	1,740	37	2.2%
562910	Remediation services	2,727	3,780	1,053	38.6%
811310	Commercial machinery repair and maintenance	7,676	7,656	-20	-0.3%
924110	Air, water, and waste program administration	6,146	6,109	-37	-0.6%
924120	Administration of conservation programs	5,523	5,598	75	1.4%
926130	Utility regulation and administration	467	440	-27	-5.8%
	Ancillary Industry Totals	169,024	170,416	1,392	0.8%

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

		Average	Average		
		Estblishments,	Establishments,	Numeric	Percent
NAICS	Title	2012	2013	Change	Change
221112	Fossil fuel electric power generation	74	62	-12	-16.2%
221210	Natural gas distribution	147	142	-5	-3.4%
221310	Water supply and irrigation systems	253	77	-176	-69.6%
221320	Sewage treatment facilities	208	22	-186	-89.4%
237110	Water and sewer line system construction	371	363	-8	-2.2%
237310	Highway, street, and bridge construction	726	412	-314	-43.3%
238912	Nonresidential site preparation contractors	604	594	-10	-1.7%
325110	Petrochemical manufacturing	5	5	0	0.0%
325120	Industrial gas manufacturing	46	42	-4	-8.7%
331110	Iron, steel mills and ferroalloy manufacturing	62	60	-2	-3.2%
331210	Iron, steel pipe and tube from purchased steel	50	38	-12	-24.0%
333131	Mining machinery and equipment manufacturing	11	12	1	9.1%
333132	Oil and gas field machinery and equipment	10	11	1	10.0%
423810	Construction equipment merchant wholesalers	204	191	-13	-6.4%
423830	Industrial machinery merchant wholesalers	1,663	1,626	-37	-2.2%
423840	Industrial supplies merchant wholesalers	510	487	-23	-4.5%
484110	General freight trucking, local	1,356	1,370	14	1.0%
484220	Other specialized trucking, local	1,015	1,021	6	0.6%
484230	Other specialized trucking, long-distance	297	312	15	5.1%
531190	Lessors of other real estate property	282	275	-7	-2.5%
532412	Other heavy machinery rental and leasing	175	187	12	6.9%
541330	Engineering services	2,287	2,104	-183	-8.0%
541360	Geophysical surveying and mapping services	53	53	0	0.0%
541380	Testing laboratories	362	369	7	1.9%
541620	Environmental consulting services	308	314	6	1.9%
562910	Remediation services	202	203	1	0.5%
811310	Commercial machinery repair and maintenance	1,093	1,074	-19	-1.7%
924110	Air, water, and waste program administration	162	158	-4	-2.5%
924120	Administration of conservation programs	278	274	-4	-1.4%
926130	Utility regulation and administration	29	30	1	3.4%
	Ancillary Industry Totals	12 843	11 888	-19	-0.1%

Figure 4. Ancillary Shale-Related Industry Annual Establishment Averages and Year-to-Year Change

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Demand for Workers in Shale-Related Occupations

Figure 5 shows the monthly number of online ads for shale-related oil and gas extraction jobs from January 2011 through December 2013. In 2013, 2,984 ads were posted for shale-related jobs in Ohio, up from 2,021 ads in 2012. According to The Conference Board's Help Wanted OnLine[®] data series, the number of ads posted in spring 2013 was somewhat lower than in spring 2012, but demand picked up in late 2013. This series is an indicator of occupational demand, but it

does not capture all online job ads, and it does not capture jobs not advertised online.



Figure 5. Help Wanted OnLine[©] Job Ads for Shale-Related Oil and Gas Extraction

Source: The Conference Board, Help Wanted OnLine[®] data series

Key Shale-Related Occupations

The occupations listed in this report are not exclusive to any one industry, but they have a high presence in shale-related industries. Figure 6 shows key occupations in core and ancillary shale-related industries. These occupations are likely to provide family-sustaining wages and tend to require higher skill sets.

		Median	
SOC		Annual	Typical Education, Work Experience, On-
Code	SOC Title	Wage	the-Job Training Needed
53-7062	Laborers and Freight Stock and Material Movers Hand	\$20,180,38	Less than HS. Short-term OJT
43-9061	Office Clerks General	\$24,324.06	HS dipl./GED. Short-term OJT
45-4022	Logging Equipment Operators	\$25,460,14	HS dipl/GED. Moderate-term Q JT
47-5071	Roustabouts Oil and Gas	\$25,576,35	Less than HS. Moderate-term QJT
47-5012	Rotary Drill Operators, Oil and Gas	\$26,023,34	Less than HS. Moderate-term QJT
43-4051	Customer Service Representatives	\$26,946.29	HS dipl./GED. Short-term OJT
43-6014	Secretaries Except Legal Medical and Executive	\$27,555,50	HS dipl./GED. Short-term OJT
43-3021	Billing and Posting Clerks and Machine Operators	\$28,482,55	HS dipl./GED. Short-term OJT
47-5011	Derrick Operators Oil and Gas	\$29,125,40	Less than HS. Short-term OJT
		+=-,-==	Less than HS. Less than 5 vrs Exp. Moderate-
53-7073	Wellhead Pumpers	\$29.510.91	term QJT
00 / 0/ 0	Welding Soldering and Brazing Machine Setters Operators	<i><i><i><i></i></i></i></i>	
51-4122	and Tenders	\$29,813,59	HS dipl/GED. Moderate-term QJT
43-3031	Bookkeeping Accounting and Auditing Clerks	\$30,504,40	HS dipl/GED. Moderate-term QJT
51-9061	Inspectors Testers Sorters Samplers and Weighers	\$30.876.11	HS dipl/GED. Moderate-term QJT
51-4121	Welders Cutters Solderers and Brazers	\$31 785 55	HS dipl/GED_Moderate-term O IT
47-2061	Construction Laborers	\$31 878 81	Less than HS_Short-term O IT
53-3032	Truck Drivers Heavy and Tractor-Trailer	\$33 434 37	HS dipl/GED_Short-term O IT
43-5061	Production Planning and Expediting Clerks	\$34 177 29	HS dipl./GED_Moderate-term O IT
17-3025	Environmental Engineering Technicians	\$36,941,30	Associate's Deg
49-3042	Mohile Heavy Equipment Mechanics Excent Engines	\$38 596 12	HS dipl/GED_Long-term O IT
49-9052	Telecommunications Line Installers and Repairers	\$38,969,37	HS dipl./GED. Long-term Q IT
49-9041	Industrial Machinery Mechanics	\$39,680,33	HS dipl./GED_Long-term O IT
17 7011	Operating Engineers and Other Construction Equipment	\$07,000.00	
47-2073	Operators	\$39 718 89	HS dipl/GED_Moderate-term O IT
53-7072	Pump Operators Except Wellhead Pumpers	\$40 182 02	Less than HS_Moderate-term O IT
47-5013	Service Unit Operators Oil Gas and Mining	\$40,594,97	Less than HS_Moderate-term O IT
47-2152	Plumbers Pipefitters and Steamfitters	\$42 141 53	HS dipl/GED_Apprenticeship
17 2102	First-Line Supervisors/Managers of Trans and Material-	φ12,111.00	
53-1031	Moving Machine and Vehicle Operators	\$45 374 58	HS dinl/GED_Less than 5 yrs Exp
19-4041	Geological and Petroleum Technicians	\$45 717 41	Associate's Deg Moderate-term O IT
17 1011	First-Line Supervisors/Managers of Production and	φ10,717.11	
51-1011	Operating Workers	\$47 444 21	Post-HS non-Deg award Less than 5 yrs
13-1051	Cost Estimators	\$48 378 37	Bachelor's Deg
17-3023	Electrical and Electronic Engineering Technicians	\$48,370.37	Associate's Deg
17-2151	Mining and Geological Engineers, Including Mining Safety	\$50,377.27	Bachelor's Deg
17-2131	First Line Supervisors/Managers of Mechanics Installers	ψ30,373.00	
49-1011	and Renairers	\$50 752 <i>1</i> 0	HS dinl/GED Less than 5 yrs Evn
47-1011	First-Line Supervisors/Managers of Construction Trades	ψJU,1JJ.47	
47-1011	and Extraction Workers	\$51 402 02	HS dinl /GED_More than 5 yrs Evn
49-9051	Flectrical Power-Line Installers and Repairers	\$53 070 17	HS dipl/GED Long-term O IT
53_7071	Gas Compressor and Gas Pumping Station Operators	\$54 776 60	Less than HS_Moderate_term O IT
33-7071	Sales Representatives Wholesale and Manufacturing	φυτ, πο.00	
11_1011	Technical and Scientific Products	\$61 050 72	Bachelor's Deg. Moderate term O IT
10_20/12	Conscientists Excent Hydrologists and Coographers	\$63.846.40	Bachelor's Deg.
17_2112	Industrial Engineers	\$64 252 22	Bachelor's Deg
1 17 2112		Ψυτ, υυζ. ΖΖ	

Figure 6. Key Occupations in Shale-Related Industries

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2013

Increased shale-related oil and gas extraction and production in Ohio presents employment opportunities for many workers hurt by the recession of 2007 to 2009. Average wages for construction and extraction occupations are generally above the state median, and their entry-level requirements for education, work experience and training are modest.

From 2012 to 2013, the number of construction trades jobs in core oil and gas industries in Ohio increased by 89.1 percent, from 1,811 to 3,424. More than 90 percent of that increase was in oil and gas pipeline construction. The number of extraction trades jobs increased by 35.7 percent, from 1,096 to 1,486. Most of that increase was in support activities for oil and gas operations. The crude petroleum and natural gas extraction industry was the only core industry that saw a decline in construction and extraction trades employment.

		2012		2013		2012-2013 Numeric Change	
NAICS	Title	Construction Trades	Extraction Trades	Construction Trades	Extraction Trades	Construction Trades	Extraction Trades
211111	Crude Petroleum and Natural Gas Extraction	102	239	59	140	-42	-100
211112	Natural Gas Liquid Extraction	7	16	11	25	4	10
213111	Drilling Oil and Gas Wells	101	222	152	335	52	114
213112	Support Activities for Oil and Gas Operations	251	551	384	844	133	293
237120	Oil and Gas Pipeline Construction	1,336	67	2,803	142	1,467	74
486210	Pipeline Transportation of Natural Gas	15	0	15	0	0	0
	Core Industries Totals	1 811	1 096	3 4 2 4	1 486	1 613	391

Figure 7. Estimated Number of Construction and Extraction Jobs in the Core Shale-Related Industries

Source: U.S. Bureau of Labor Statistics

Shale-Related Industries' Worker State of Residence

Although data are not available on the state of residence for all workers, limited information is available from the State Directory of New Hires. This database was developed to assist in collecting child support. State law requires all Ohio employers to report all independent contractors and newly hired and rehired employees to the directory with 20 days of the hire or rehire date.² Hiring activities that generate W-4 tax forms are included in the data.

On average in 2013, core-industry employers reported 922 new hires from Ohio and 638 new hires from other states each quarter. This was a 79.4 percent increase in new hires from Ohio over 2012, and a 73.4 percent increase for out-of-state new hires. In 2013, 59.1 percent of new hires were from Ohio; this was up slightly from 58.3 percent of new hires from Ohio in 2012. See Figure 8 for details.

² Ohio Revised Code Section 3121.89-3121.8911 and the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, 42 U.S.C. 653a.

Ancillary shale-related industry employers reported an average of 9,498 Ohio new hires and 8,123 out-of-state new hires each quarter during 2013. This was a 3.2 percent increase over 2012 for Ohio, but an 18.2 percent increase for out-ofstate new hires. In 2013, 53.9 percent of news hires in ancillary shale-related industries were from Ohio; this was down from 57.2 percent in 2012. See Figure 9 for details.

2012	2013					
514	922					
368	638					
15	12					
25	22					
40	12					
59	102					
42	144					
189	346					
	2012 514 368 15 25 40 59 42 189					

Figure 8. 2012 and 2013 Average Quarterly New Hires in the Core Shale-Related Industries

Source: Ohio Directory of New Hires

es in the Anchary Shale-Related				
State of Residence	2012	2013		
Ohio	9,206	9,498		
Total Out-of-State	6,872	8,123		
Indiana	496	539		
Kentucky	406	433		
Michigan	402	472		
Pennsylvania	482	527		
West Virginia	198	264		
All Other States	4,889	5,890		

Figure 9. 2012 and 2013 Average Quarterly New Hires in the Ancillary Shale-Related Industries

Source: Ohio Directory of New Hires

Total Wage Growth in the Core Shale-Related Industries

Total wages in the core shale-related industries grew 24.1 percent from 2012 to 2013, or more than \$151 million. Although wage growth was less than average employment growth (34.8 percent), the reclassification of some business establishments into different industries could have caused changes in total industry wages from 2012 to 2013 as well as changes in industry employment. Three core industries had total wage growth above their employment growth. Oil

and gas pipeline construction had total wage growth of 161.1 percent and a 109.8 percent increase in employment. Drilling oil and gas wells had total wage growth of 78.9 percent and a 51.3 percent increase in employment. Support activities for oil and gas operations had total wage growth of 65.1 percent and a 53.1 percent increase in employment. See Figure 10 for detailed industry wage growth.

U	1	Ų			0
NAICS	Title	Total Wages (thousands), 2012	Total Wages (thousands), 2013	Numeric Change	Percent Change
211111	Crude Petroleum and Natural Gas Extraction	\$303,649	\$104,546	-\$199,103	-65.6%
211112	Natural Gas Liquid Extraction	\$15,447	\$22,553	\$7,106	46.0%
213111	Drilling Oil and Gas Wells	\$33,384	\$59,738	\$26,354	78.9%
213112	Support Activities for Oil and Gas Operations	\$93,416	\$154,246	\$60,830	65.1%
237120	Oil and Gas Pipeline and Related Structures Construction	\$159,261	\$415,887	\$256,626	161.1%
486210	Pipeline Transportation of Natural Gas	\$24,081	\$23,972	-\$109	-0.5%
	Core Industries Totals	\$629,238	\$780,942	\$151,704	24.1%

Figure 10. Core Shale-Related Industry Total Wages and Year-to-Year Change

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Regional Workforce Development Plans

Ohio's workforce investment boards establish local policies for workforce services funded by the federal Workforce Investment Act. They also develop fiveyear plans to identify target populations, in-demand occupations and employment trends, in order to guide service delivery to support growing industries and successful job placement. They are required to submit these plans to the Ohio Department of Job and Family Services, which reviews them for viability, especially as it relates to compliance and performance.

Local workforce investment boards are required to submit biannual amendments to their plans, as part of their memorandums of understanding with the state. The amendments reflect planned changes in service delivery to respond to evolving economic and occupational needs. Local areas that identify occupations in shale-related core and ancillary industries as in-demand occupations include that information in their local plans and policies.

Summary

Employment in core shale-related oil and gas industries in Ohio increased from 2012 to 2013. Average annual employment increased from 8,210 to 11,070, a 34.8 percent increase. Employment in the oil and gas pipeline construction industry increased 109.8 percent to 5,241. The number of business establishments increased 12.1 percent from 651 to 730.

Employment growth in the ancillary shale-related industries was flat from 2012 to 2013. Average annual employment increased 0.8 percent, from 169,024 to 170,416. The number of establishments declined by 19, or about -0.1 percent. It is important to note that ancillary shale-related businesses serve other industries in addition to oil and gas extraction.

Employer demand for shale-related occupations increased. In 2013, 2,984 ads were posted online for shale-related jobs, compared to 2,021 in 2012. Entry-level requirements for many occupations in shale-related industries are modest. Median annual wages for these jobs range from \$20,180 to \$64,352. The estimated number of construction and extraction trades jobs increased significantly from 2012 to 2013. Construction trades jobs increased by 1,613, with more than 90 percent of growth concentrated in the oil and gas pipeline construction industry. Extraction trades jobs increased by 391, mostly among the support activities for oil and gas operations industry.

Among the core shale-related industries, 59.1 percent of new hires (an average of 922 per quarter) were Ohio residents in 2013. This was up slightly from 58.3 percent in 2012. Among the ancillary industries, 53.9 percent of new hires were Ohio residents in 2013. This was a decline from 57.2 percent in 2012.

Overall, total wages for the core shale-related industries grew by more than \$151 million to almost \$781 million, a 24.1 percent increase. For three of the five core shale-related industries, total industry wages increased faster than industry employment. The largest difference between the total-wage increase and the employment increase was for oil and gas pipeline construction. Total wages increased by 161.1 percent, and employment increased 109.8 percent. Local workforce investment areas with in-demand shale occupations include that information in their local plans and policies, in order to help individuals become trained in the skills employers need.

John R. Kasich, Governor State of Ohio http://Ohio.gov

Cynthia C. Dungey, Director Ohio Department of Job and Family Services <u>http://jfs.ohio.gov</u>

> Office of Workforce Development http://jfs.ohio.gov/owd/

Bureau of Labor Market Information http://OhioLMI.com

(December 2014)

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