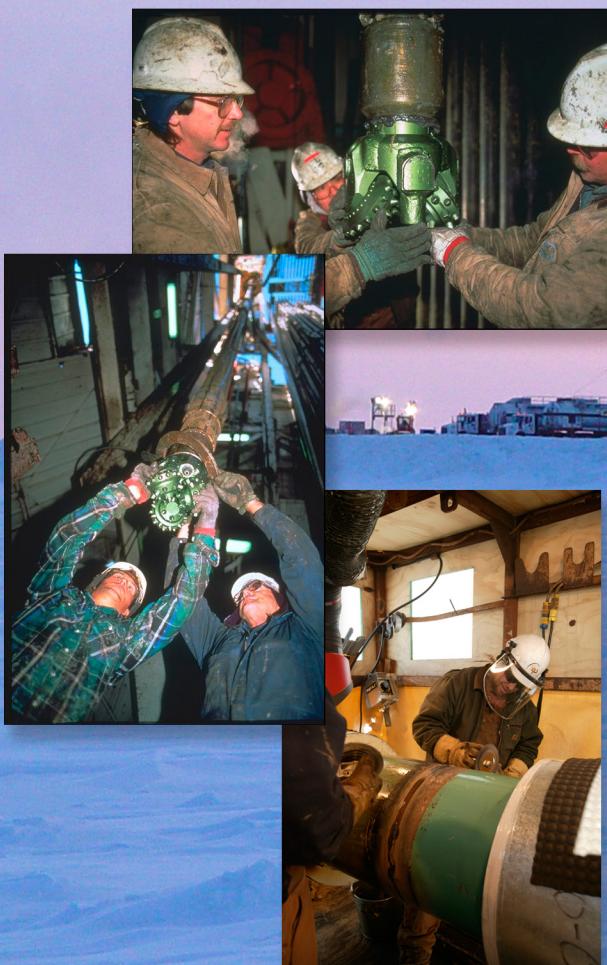


# Oil and Gas Industry Employment

## on Alaska's North Slope



PREPARED FOR  
Senate Finance Committee  
Alaska State Legislature

PREPARED BY  
 McDowell  
GROUP

# ***Oil and Gas Industry Employment on Alaska's North Slope***

*Prepared for:*  
**Senate Finance Committee  
Alaska State Legislature**

*Prepared by:*



---

*Juneau • Anchorage*

*January 2012*

# Table of Contents

---

<b>Project Overview</b> .....	1
Purpose and Scope .....	1
Key Findings .....	1
<b>Executive Summary and Analysis</b> .....	3
Recent Oil and Gas Industry Employment .....	3
Nonresidents in the Oil and Gas Industry Workforce .....	5
Industry Spending .....	8
Oil and Gas Industry Activity Indicators.....	9
Oil and Gas Industry Recruiting .....	10
<b>Introduction</b> .....	11
Purpose and Scope .....	11
Data Sources and Methods .....	11
<b>Chapter 1. Trends in Alaska's Oil and Gas Industry</b> .....	13
Production Trends.....	13
Indicators of Oil and Gas Industry Activity .....	18
Oil and Gas Industry Spending .....	18
Companies Active in Alaska's Oil and Gas Industry.....	21
Baker Hughes Rig Count.....	22
Drilling Permits.....	23
Well Completions and Workovers .....	25
<b>Chapter 2. Statewide and North Slope Employment</b> .....	28
Recent Employment in Alaska's Oil and Gas Industry .....	28
Summary of Reported Oil and Gas Industry Employment.....	28
Statewide Trends in Oil and Gas Sector Employment .....	31
Prudhoe Bay Employment.....	34
Long-term North Slope Employment and Production Trends .....	37
Firms Reporting Prudhoe Bay Employment .....	38
<b>Chapter 3. Nonresidents in the Oil and Gas Industry Labor Force</b> .....	40
Nonresident Participation in Alaska's Oil and Gas Industry Workforce .....	42
Residency Characteristics of Individual Prudhoe Bay Zone Employers, 2005-2009 .....	49
North Slope Worker Movement.....	51
Oil and Gas Industry Alaska Resident Workers' Place of Residence .....	53
Oil and Gas Industry Workforce New Hire Residency.....	54
Unemployment Insurance Claimants' Residency Characteristics .....	60
Former Alaska Residents in the Oil and Gas Industry Workforce.....	62
<b>Chapter 4. Oil and Gas Industry Occupational Analysis</b> .....	64
Top North Slope Occupations .....	64
Residency by Occupation .....	66
Demographics by Occupation.....	69
<b>Chapter 5. Oil and Gas Industry Recruiting Practices</b> .....	74
Introduction.....	74
Recruitment Methods .....	74
Recruitment and Retention Challenges .....	76
Employee Incentives .....	76
Demand for Oil and Gas Employees Outside of Alaska .....	77
Workforce Development and Alaska Resident Case Study.....	78

# List of Figures

---

Figure 1: Annual Prudhoe Crude Oil Production History, 1978-2010 (in million barrels/day) .....	14
Figure 2: Annual North Slope Crude Oil Production History, Excluding Prudhoe Bay, 1978-2010 (in million barrels/day).....	14
Figure 3: Average Annual Daily Alaska Crude Oil Production, 1978-2010 (in million barrels/day) .....	15
Figure 4: Annual Alaska North Slope Wellhead Price (\$/barrel), 1978-2009 .....	16
Figure 5: Total Annual Alaska North Slope Crude Oil Wellhead Value, 1978-2010 (in \$billions) .....	17
Figure 6: Alaska North Slope West Coast Monthly Prices, Price Per Barrel, January 2008-November 2011...	17
Figure 7: Capital Expenditures Producing Units and Units Under Development, FY2008-2010.....	19
Figure 8: North Slope CAPEX Monthly Expenditures (in \$millions), July 2008-June 2011 .....	20
Figure 9: North Slope OPEX Monthly Expenditures (in \$millions), July 2008-June 2011.....	20
Figure 10: Combined North Slope Monthly Capital and Operating Expenditures (in \$millions), July 2008-June 2011 .....	21
Figure 11: Baker Hughes Annual Average Alaska Drill Rig Count, 2000-2010.....	22
Figure 12: Monthly Average Alaska Drill Rig Count, January 2008-December 2011 .....	23
Figure 13: Number of Oil and Gas Drilling Permits Issued in North Slope, 2001-2010.....	24
Figure 14: North Slope Oil and Gas Well Completions, 2002-2010 .....	26
Figure 15: Number of North Slope Well Workovers, 2003-2010.....	27
Figure 16: Alaska Oil and Gas Industry Average Employment, 2002-2010 (Sectors 211, 212111, 213112 Combined) .....	32
Figure 17: Annual Alaska Oil and Gas Industry (211, 212111, 213112) Employment Estimates, 2002-2010 .....	32
Figure 18: Monthly Statewide Alaska Oil and Gas Employment Estimates, January 2008-November 2011 ..	34
Figure 19: Monthly North Slope Oil and Gas Employment Estimates, January 2008-November 2011 .....	36
Figure 20: Selected Private Sector Industries Percent Nonresident Workers, 2009 .....	41
Figure 21: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers, Sector 211, 2002-2009 .....	43
Figure 22: Resident and Nonresident Payroll in Alaska's Oil and Gas Industry, Sector 211, 2002-2009 (\$millions).....	44
Figure 23: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers, Sectors 213111 and 213112, 2002-2009 .....	45
Figure 24: Resident and Nonresident Payroll in Alaska's Oil and Gas Industry, Sectors 213111 and 213112, 2002-2009 (\$millions) .....	46
Figure 25: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers, Sectors 211, 213111 and 213112 Combined, 1998-2009 .....	47
Figure 26: Resident and Nonresident Payroll in Alaska's Oil and Gas Industry, Sectors 211, 213111 and 213112, 1998-2009 (\$millions).....	48
Figure 27: Percentage Nonresident Worker Participation in Oil and Gas Industry, Sectors 211, 213111 and 213112, 2002-2009 .....	48
Figure 28: North Slope Oil and Gas Industry New Hires by Residency, Percent Nonresident Hires, by Quarter, 2004-2010.....	57
Figure 29: Statewide Oil and Gas Industry New Hires by Residency, Percent Nonresident Hires, by Quarter, 2004-2010.....	58
Figure 30: Top 20 North Slope Borough Occupations, Total Worker Count, 2009 .....	64

Figure 31: Age of Petroleum Pump System Operators, Refinery Operators and Gaugers in the Prudhoe Bay Zone, 2004-2009.....	70
Figure 32: Age of Truck (Heavy and Tractor-Trailer) Drivers, in the Prudhoe Bay Zone, 2004-2009.....	70
Figure 33: Age of Roustabouts in the Prudhoe Bay Zone, 2004-2009 .....	71

# List of Tables

---

Table 1: Annual North Slope Crude Oil Production History, 2001-2010 (in million barrels/day).....	15
Table 2: Annual Alaska North Slope Wellhead Price, 1978-2009 .....	16
Table 3: Alaska North Slope West Coast Monthly Prices, Price Per Barrel, January 2008-November 2011 ....	18
Table 4: Oil and Gas Industry North Slope Related Spending (\$millions), FY2007-2011 .....	18
Table 5: ConocoPhillips North Slope Related Spending (\$millions), 2005-2010.....	19
Table 6: North Slope CAPEX and OPEX Combined Monthly Expenditures (in \$millions), July 2008-June 2011 .....	21
Table 7: Oil and Gas Production Tax, Number of Tax Returns Filed and Tax Payers, 2005-2010 .....	22
Table 8: Monthly Average of Rotary Rigs in Alaska, 2008-2011.....	23
Table 9: North Slope Oil and Gas Drilling Permits, 2002-2010 .....	24
Table 10: North Slope Oil and Gas Exploratory Well Permits Issued, 2002-2010.....	24
Table 11: North Slope Drill Permits Issued, by Company, 2008-2011.....	25
Table 12: North Slope Oil and Gas Well/Wellbore Completions, by Type, 2002-2010 .....	26
Table 13: North Slope Oil and Gas Well Completions , 2002-2010.....	26
Table 14: Firms Reporting Employment in the Oil and Gas Extraction Sector in Alaska, 2010 .....	29
Table 15: Firms Reporting Employment in the Drilling Oil and Gas Wells Sector in Alaska, 2010.....	29
Table 16: Firms Reporting Average Employment of 50 or More in the Support Activities for Oil and Gas Operations Sector in Alaska, 2010 .....	30
Table 17: Alyeska Pipeline Service Company Direct Employment, by Location, 2010.....	31
Table 18: Statewide Oil and Gas Industry (NAICS Sectors 211, 213111, 213112) Employment, Total Annual Payroll and Average Monthly Earnings, 2002-2010 .....	32
Table 19: Statewide Oil and Gas Extraction Industry (NAICS Sector 211) Employment, Total Annual Payroll and Average Monthly Earnings, 2002-2010.....	33
Table 20: Statewide Drilling Oil and Gas Wells (NAICS Sector 213111) Employment, Total Annual Payroll and Average Monthly Earnings, 2002-2010 .....	33
Table 21: Statewide Support Activities for Oil and Gas Operations (NAICS Sector 213112) Employment, Total Payroll and Average Monthly Earnings, 2002-2010 .....	33
Table 22: Monthly Alaska Oil and Gas Employment Estimates, January 2008-November 2011 .....	34
Table 23: Statewide and Prudhoe Bay Oil and Gas Industry Employment, 2004-2010 .....	35
Table 24: Prudhoe Bay Private Sector Employment, Payroll and Average Earnings, Annual Percent Change, 2005-2010.....	35
Table 25: Prudhoe Bay Private Sector Employment, Payroll and Average Earnings, 2004-2010 .....	35
Table 26: Prudhoe Bay Oil & Gas Industry and All Other Private Sector Employment and Payroll, 2004-2010 .....	36
Table 27: Prudhoe Bay Private Sector Employment and Payroll, By Sector, 2004-2010.....	36
Table 28: Monthly North Slope Oil and Gas Employment Estimates, January 2008-November 2011 .....	37
Table 29: North Slope Oil and Gas Industry Employment and Production, 1980-2010 .....	38
Table 30: Prudhoe Bay Firms with Employment of 20 or More, 2010 .....	39
Table 31: Workers and Wages by Industry, Alaska Total and Nonresident, 2009 .....	40
Table 32: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers Statewide, Sector 211, 2002 – 2009 .....	43

Table 33: Resident and Nonresident Payroll in Alaska's Oil and Gas Industry, Sector 211, 2002-2009 (\$millions).....	44
Table 34: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers, Sectors 213111 and 213112, 2002-2009 .....	45
Table 35: Resident and Nonresident Participation in Oil and Gas Industry, Payroll, Sectors 213111 and 213112, 2002-2009 (\$millions).....	45
Table 36: Resident and Nonresident Participation in Oil and Gas Industry, Numbers of Workers, Sectors 211, 213111 and 213112 Combined, 1998-2009.....	46
Table 37: Resident and Nonresident Participation in Oil and Gas Industry, Payroll, Sectors 211, 213111 and 213112, 1998-2009 (\$millions).....	47
Table 38: North Slope Borough and Statewide Oil Industry Resident and Nonresident Employment and Wages, 2006-2009.....	49
Table 39: Nonresident Participation Trends by Firm, 2005-2009 .....	50
Table 40: Nonresident Participation Trends for Oil and Gas Industry Firms Not Reporting North Slope Employment, 2005-2009 .....	51
Table 41: Worker Movement, Prudhoe Bay Zone Employers Using 2006 Worker Cohort, 2004-2009 .....	53
Table 42: Workers and Wages by Place of Residence for Oil & Gas Industry Workers, NAICS 211, 213111, and 213112, 3 <sup>rd</sup> Quarter 2009 .....	54
Table 43: Alaska New Hires by Industry, 3 <sup>rd</sup> Quarter 2009 and 3 <sup>rd</sup> Quarter 2010 .....	56
Table 44: North Slope Oil and Gas Industry New Hires by Residency, by Quarter, 2004-2010.....	59
Table 45: Statewide New Hires by Residency in the Oil and Gas Industry, by Quarter, 2004-2010.....	60
Table 46: Resident and Nonresident Worker Unemployment Claimants in Alaska's Oil and Gas Industry, 2004-2010.....	61
Table 47: Resident and Nonresident Worker Unemployment Claims Paid in Alaska's Oil and Gas Industry, 2004-2010.....	62
Table 48: Former Alaska Residents in the Oil and Gas Industry Workforce, 2009.....	63
Table 49: Top 30 North Slope Borough Occupations, Quarterly and Total Counts, Total Wages, 2009.....	65
Table 50: Workers by Occupation and Residency, North Slope Borough, 4 <sup>th</sup> Quarter 2009.....	67
Table 51: Total Workers by Occupation, 1 <sup>st</sup> and 3 <sup>rd</sup> Quarters, 2004-2009 .....	68
Table 52: Nonresident Workers by Occupation, 1 <sup>st</sup> and 3 <sup>rd</sup> Quarters, 2004-2009 .....	68
Table 53: Percent Nonresident Workers by Occupation, 1 <sup>st</sup> and 3 <sup>rd</sup> Quarters, 2004-2009 .....	69
Table 54: Demographic Information of Prudhoe Bay Zone Workers, 2004.....	72
Table 55: Demographic Information of Prudhoe Bay Zone Workers, 2009.....	73

## **Acknowledgment**

The McDowell Group study team wishes to acknowledge the important contribution of the Alaska Department of Labor and Workforce Development to the completion of this study. Without ADOLWD's cooperation and substantial commitment of staff time, this research project would not have been possible.

# Project Overview

---

## Purpose and Scope

In September 2011, the Alaska State Senate Finance Committee contracted with McDowell Group to conduct a study of oil and gas industry employment on the North Slope. The study includes three general areas of investigation:

- *Analysis of recent oil and gas industry employment trends on the North Slope.* Published reports of record high employment coupled with conflicting news of significant job losses in the industry raised questions about the real direction of North Slope employment.
- *Analysis of work activity on the North Slope.* Oil production continues to trend steadily down, yet oil and gas industry employment in Alaska has been at historically high levels. Recognition of the forces that are driving employment on the North Slope is required to better understand recent employment trends.
- *Analysis of nonresident participation in Alaska's oil and gas industry workforce.* Nonresidents have always been a significant component of Alaska's labor force, including in the oil and gas industry. However, preliminary data indicating a potential rise in nonresident new-hires suggested the need for a detailed analysis of nonresident participation in Alaska's oil and gas industry work force.

Key findings are summarized below, followed by a more detailed summary of study results.

## Key Findings

### TOTAL EMPLOYMENT

- On a monthly average basis, North Slope oil industry employment climbed to an all-time high in 2011. Employment averaged just under 9,000 jobs through November, about 500 jobs more than in 2010.
- North Slope oil and gas industry employment more than doubled over the past ten years, adding 5,000 jobs since 2000.
- Reports of declining North Slope employment in 2009 were accurate. Over an 11-month period beginning in December 2008, North Slope employment fell by 1,200 jobs, a 13 percent decline, before returning to a growth trend.

### WORK ACTIVITY

- Rapid growth in North Slope employment has occurred while oil production continues its steady long-term decline. Oil prices rising to record levels incentivized new development activity and projects aimed at enhancing recovery from mature fields. Historically high oil prices, coupled with

necessary major investment in renewal of the aging Prudhoe Bay infrastructure, are primary drivers of the recent rise in North Slope employment.

- Reported North Slope-related spending totaled \$4.9 billion in FY2011, marking at least the fourth consecutive year in spending growth (earlier comparable data is not available). Since FY2007, annual spending has increased by about \$1.3 billion.
- Though North Slope industry-wide data is not available, North Slope oil producers report significant shifts in spending for maintenance at core fields. For example, one key firm (ConocoPhillips – CPAI) reports its annual maintenance spending is \$800 million more per year than it was five years ago while development spending is unchanged.

#### **NONRESIDENTS IN THE NORTH SLOPE LABOR FORCE**

- According to the most recent estimates, 35 percent of North Slope oil and gas industry workers are nonresidents. This percentage has been relatively steady over the past few years, and was at a four-year high of 37 percent in 2006.
- Nonresidents accounted for 56 percent of all North Slope oil and gas industry new-hires during the third quarter of 2010, the highest nonresident new-hire rate in any quarter in the 2004 to 2010 period. New-hire data reflects the number of job openings that occurred during the quarter, either through new job creation or turnover. It is not a measure of overall job growth.
- The 2010 annual nonresident new-hire rate was 44 percent, also the highest annual rate in the past seven years. The second highest rate was 40 percent in 2008.
- This nonresident new-hire data indicates an uptick in nonresident participation, but the overall increase is likely to be within historical norms. Nonresident new-hire rates are typically higher than overall nonresident participation rates because short-term, seasonal jobs are more often filled by nonresidents.
- Resident and nonresident oil and gas industry workers on the North Slope earn about equal wages.

# Summary of Findings

---

This Summary of Findings includes the following subsections:

- Recent Oil and Gas Industry Employment
- Nonresidents in the Oil and Gas Industry Workforce
- Oil and Gas Industry Activity Indicators
- Industry Spending
- Oil and Gas Industry Recruiting

While the focus of this study is primarily on oil and gas industry employment on the North Slope, statewide data and analyses are also presented where relevant.

## **Recent Oil and Gas Industry Employment**

Employment and payroll figures described below include jobs in the specific sectors of Oil and Gas Extraction, Drilling Oil and Gas Wells, and Support Activities for Oil and Gas Operations, collectively termed the oil and gas industry in published data. These sectors account for about 80 percent of the jobs on the North Slope.

### **NORTH SLOPE OIL AND GAS INDUSTRY EMPLOYMENT**

- In July 2011, North Slope oil and gas industry employment climbed to an all-time high of 9,250 jobs. Employment dipped slightly over the next three months (down 150 jobs overall), but climbed back to the 9,250 peak again in November, based on preliminary Alaska Department of Labor and Workforce Development (ADOLWD) data.
- North Slope oil and gas industry employment has nearly doubled since 2004, when employment in the industry averaged 4,800 jobs.
- After gaining 4,300 jobs between 2004 and 2008, North Slope employment fell by 1,200 over an 11-month period beginning in December 2008, a 13 percent drop.
- After hitting bottom in November 2009, the industry rebounded, adding 1,400 jobs over the next year and a half, an 18 percent jump.
- The most recent full year payroll data is for 2010. That year, oil and gas industry workers on the North Slope earned \$859 million in total payroll, with average monthly earnings of \$8,478 (\$101,700 annually).
- Two-thirds (66 percent) of all reported oil and gas industry jobs in Alaska are located on the North Slope.

## OTHER NORTH SLOPE OIL INDUSTRY-RELATED EMPLOYMENT

- In addition to the North Slope oil and gas industry jobs reported above, there are another 2,000 jobs in the Prudhoe Bay area that are due solely to oil industry activity, but not reported as such. This includes jobs in construction, transportation, business/professional services, and other sectors, all providing various services to producers, explorers, or oilfield services firms.
- The most recent full accounting of all North Slope oil industry-related jobs is for 2010. That year, employment in the Prudhoe Bay Zone (an ADOLWD designation that captures all North Slope oil and gas industry activity) averaged 10,446 jobs and accounted for \$993.5 million in payroll.
- Prudhoe Bay Zone employment has grown in each of the last six years, gaining a total of 4,400 jobs and \$519 million in annual payroll over the 2004 to 2010 period.

## CHANGING NATURE OF NORTH SLOPE EMPLOYMENT

- The relationship between jobs and production on the North Slope has changed fundamentally over the past decade. In 2000, North Slope oil production totaled approximately 108,000 barrels for every oil and gas industry job (measured on an annual average basis) on the North Slope. In 2010, North Slope oil production totaled approximately 28,000 barrels for every oil and gas industry job on the North Slope. The peak year, in terms of barrels of oil produced per North Slope job, was in 1987, at 255,000 barrels per job.
- A number of forces account for this trend, including declining oil production (average daily production has declined 38 percent since 2000). That decrease in production has been in marked contrast to a substantial increase in North Slope employment. Rising employment (more than doubling since 2000) is primarily the result of new development activity (Pt. Thomson, Oooguruk, Nikaitchuq), increasingly labor-intensive and capital-intensive (on a per barrel basis) efforts to extract additional oil from mature fields, and Prudhoe Bay renewal activity.
- Additional hiring activity may also be due to changing workforce demographics. For example, BP Exploration (Alaska) reports 40 percent of its North Slope workforce is retirement eligible, requiring additional staffing now in anticipation of retirement-related turnover in the near future.

## STATEWIDE OIL AND GAS INDUSTRY EMPLOYMENT

- Similar to North Slope employment trends, over the past four years statewide oil and gas industry employment has twice climbed to all-time highs. It first peaked in late December 2008 at 13,700 jobs, then again to that same level in September 2011. Between those peaks, employment dropped to a monthly low of 12,000 jobs.
- Through November of 2011 (including preliminary estimates for November), an average of 13,300 workers were employed in the oil and gas industry in Alaska, 580 jobs above the same time period in 2010. Employment peaked in August 2011 at 13,700 jobs, matching the all-time high reached in December of 2008.

- In 2010, an annual average of 12,752 workers were employed in Alaska's oil and gas industry sectors. These workers earned \$1.52 billion in total annual payroll. They earned the highest wages in the Alaska economy, at \$9,951 a month.
- Published oil and gas industry employment data does not include any indirect or induced employment. McDowell Group's 2011 study, *The Role of Oil and Gas Industry in Alaska's Economy*, found a total of 44,800 primarily private sector jobs in the Alaska economy directly or indirectly linked to oil and gas industry activity, and \$2.65 billion in annual payroll. This estimate does not include jobs in Alaska related to oil production taxes and royalties paid to state government.

## **Nonresidents in the Oil and Gas Industry Workforce**

Nonresidents play an important role in satisfying the labor needs of Alaskan businesses and industries. In 2009 (the latest data available from ADOLWD) a total of 76,867 nonresidents worked in Alaska. In that year, 22.1 percent of Alaska's private sector labor force was nonresident, based on ADOLWD's Permanent Fund Dividend (PFD) application-based methodology.

The North Slope oil and gas industry is entirely camp-supported. North Slope workers reside in communities throughout Alaska as well as Lower 48 locations. There are 40 Alaska communities where five or more oil and gas industry workers reside. Anchorage is home to the largest segment of those workers, with over 4,000 industry residents as of the third quarter of 2009 (including workers that reside and work in Anchorage and workers employed on the North Slope who reside in Anchorage). There were also 1,500 residing in Wasilla, 900 in Soldotna, 880 in Kenai, 600 in Fairbanks, and 500 in Palmer.

### **NONRESIDENTS IN THE NORTH SLOPE OIL INDUSTRY WORKFORCE**

- Based on PFD applications, in 2009, 35 percent of the North Slope oil and gas industry workforce was nonresident, virtually the same percentage as in 2007 and 2008, and slightly below the 2006 level of 37 percent.
- Nonresidents also earned approximately 35 percent of North Slope oil industry payroll in 2009. Again this is about the same level as the previous three years (2006 to 2008).
- Among all North Slope oil and gas workers (including full-time and seasonal), nonresidents earned an average of \$78,700 in 2009, similar to the Alaska resident average of \$77,000. These averages are based on a total worker count rather than annual average employment.
- The nonresident participation rates vary widely among the firms that employ workers on the North Slope, ranging from just a few percentage points to over 90 percent nonresident. Several smaller (fewer than 100 employees), specialized firms had nonresident participation rates of 90 percent or higher in 2009.

### **Nonresident New-Hires on the North Slope**

- Nonresident new-hires accounted for 56 percent of all oil and gas industry new-hires on the North Slope during the third quarter of 2010, the highest nonresident new-hire rate in any quarter in the

2004 to 2010 period. The fourth quarter nonresident new-hire rate dropped back to 46 percent, still higher than average, but within the range of previous quarterly nonresident new-hire rates.

- Between the years 2004 and 2010, North Slope annual nonresident new-hire rates ranged between 32 percent (2004) and 44 percent (2010). Quarterly rates ranged from a low of 29 percent (fourth quarter 2009) to the third quarter 2010 peak of 56 percent.
- The increase in nonresident new-hire rates in 2010 parallels a substantial increase in hiring between 2009 and 2010. There were a total of 3,018 North Slope oil and gas industry new-hires in 2010, 64 percent more than the 2009 total of 1,839 new-hires.
- It is possible that a new contractor engaged in a temporary project of a specialized nature and employing mostly nonresidents could have caused the spike in nonresident new-hires during the third quarter of 2010. However, new-hire data for individual firms are not available to confirm this possibility.

### ***2010 and 2011 Nonresident Participation Rates***

- The uptick in nonresident new-hires in 2010, coupled with significant recent growth in oil and gas industry employment, suggests that analysis of PFD applications for the North Slope workforce will show an upward trend in the percentage of nonresidents in the workforce. Official ADOLWD data for 2010 will be available in January 2012.

### **STATEWIDE NONRESIDENT OIL INDUSTRY WORKFORCE**

- Statewide, nonresidents play a lesser role in the oil and gas industry workforce than in the North Slope; 28 percent in 2009 compared to the North Slope rate of 35 percent. The statewide numbers include Anchorage, where a large number of oil and gas industry participants live and work.
- Statewide, in 2009 the oil and gas industry workforce included 11,841 Alaska residents and 4,627 nonresidents. Oil and gas industry workers earned \$1.55 billion in payroll, including \$1.11 billion earned by Alaska residents and \$437 million by nonresidents. Nonresidents earned 28 percent of all oil and gas industry payroll in 2009.
- Statewide, nonresident oil and gas industry workers earned an annual average of \$94,500 per individual, similar to the Alaska resident average for the industry of \$94,100. These averages are based on a count of total workers rather than annual average employment, thus the lower average wage than indicated in other published data.
- A longer-term analysis of oil and gas industry employment in Alaska illustrates a relatively consistent nonresident role in the workforce, ranging from a low of 25 percent in 1999 to a high of 31 percent in 2006. Nonresident participation typically has peaked during periods of rapid employment growth.
- ADOLWD has investigated how many workers are initially identified as nonresident, based on analysis of PFD applications, but are then counted as residents the next year. In ADOLWD's most recent

analysis, 14.5 percent of workers classified as nonresident one year were counted as residents in the following year.

### ***Statewide Nonresident Oil and Gas Industry New-Hires***

- Statewide nonresident new-hires have accounted for between 30 percent (2007) and 39 percent (2010) of all oil and gas industry new-hires annually over the 2004 through 2010 period.
- The statewide oil and gas industry nonresident new-hire rate of 51 percent during the third quarter of 2010 was the highest quarterly nonresident new-hire rate in the past six years. The fourth quarter new-hire rate dropped back to a more normal rate of 38 percent.
- During periods of rapid employment growth, employers report facing the greatest challenges filling jobs with qualified Alaskans. Given Alaska's relatively limited labor pool, especially labor with the specialized skills often required in the oil and gas industry, it is reasonable to expect a rapid run-up in employment would go hand-in-hand with a spike in nonresident hiring.
- Among the 4,863 oil and gas industry workers classified as nonresident in 2009, a total of 812 (16.7 percent) had been Alaska residents at some point since 2004. Though not quantified in this analysis, it is likely a similar analysis carried back to years prior to 2004 would identify additional nonresident oil and gas industry workers who are former Alaska residents.
- Among all industries combined, the statewide third quarter 2010 nonresident new-hire rate was 38 percent. Manufacturing (seafood processing) had the highest nonresident new-hire rate at 82 percent.

### ***Unemployment Insurance Claimants' Residency Characteristics***

- There were a total of 2,708 oil and gas industry unemployment insurance claimants in 2009 (most recent available data), nearly double the number of claimants in 2008 (1,362).
- While nonresidents accounted for 28 percent of the oil and gas industry workforce in 2009, they accounted for 20 percent of unemployment insurance claimants. Conversely, Alaska residents accounted for 72 percent of the workforce, but 80 percent of the unemployment insurance claimants in 2009. Rather than reflecting higher layoff rates among resident workers, this most likely means that some nonresident workers are on temporary assignment and are not unemployed when they leave the Alaska workforce.
- Nonresidents were a proportionately larger component of the oil and gas industry unemployment insurance claimant population in 2009 than in 2008, at 20 percent and 13 percent, respectively.

### **NONRESIDENT ANALYSIS BY OCCUPATION**

- The percentage of nonresident workers varies significantly by occupation. As of the fourth quarter of 2009, occupations with the highest share of nonresident workers (for occupations with more than 100 workers) include First-line Supervisors/Managers of Construction Trades and Extraction Workers

(46 percent nonresident), Welders, Cutters, Solderers, and Brazers (45 percent nonresident), Construction Managers (44 percent nonresident), and Electricians (43 percent nonresident).

- As the number of workers employed in various North Slope occupations has increased in recent years, the percentage of nonresident workers has remained fairly steady, varying by a few percentage points per year, for most occupations.
- The only occupation in which the percentage of nonresident workers changed markedly between 2004 and 2009 is First-Line Supervisors/Managers of Construction Trades and Extraction Workers. The average number of nonresident workers in this occupation grew from an average of 35 percent in 2004 to 47 percent in 2009.
- The percentage of nonresident Operating Engineers and Other Construction Equipment Operators fell in 2008 and 2009 after remaining steady since 2004. In 2004 through 2007, the percentage of Operating Engineers who were nonresidents averaged 44 percent. As the numbers of workers in the occupation increased in 2008 and 2009, the percentage of nonresident workers fell to an average of 32 percent.

## **NORTH SLOPE WORKER MOVEMENT**

In an effort to gauge North Slope worker retention and turnover, ADOLWD conducted (at McDowell Group's request) a cohort analysis in which workers were statistically tracked over a six-year period. A cohort of 6,755 resident and nonresident workers identified as employees of North Slope firms in 2006 were tracked back to 2004 and forward to 2009 to measure overall changes in employment status.

- Among the 6,755 workers in the 2006 North Slope worker cohort, 21 percent were with a different employer the next year, in 2007. This includes 20 percent of resident workers in the 2006 cohort and 23 percent of nonresidents in the 2006 cohort. This suggests slightly greater turnover among nonresidents than residents.
- Among residents in the 2006 worker cohort, 2,722 workers (61 percent of the 2006 resident cohort) were still with the same employer in 2009, though some were in different occupations, at a different place of work, or both. Among nonresidents, 1,274 workers (55 percent of the 2006 nonresident cohort) were with the same employer in 2009, though again some were in different occupations, at a different place of work, or both.

## **Industry Spending**

- North Slope-related oil and gas industry spending in Alaska has increased steadily over the past several years and totaled \$4.9 billion in FY2011, \$1.3 billion above the FY2007 total, based on company reports submitted to the Alaska Department of Revenue (ADOR).
- Increasing operating expenditures have accounted for most of the rise, totaling \$2.61 billion in FY2011, \$1 billion more than the FY2007 total of just under \$1.6 billion.

- Capital expenditures totaled \$2.3 billion in FY2011, slightly more than the FY2007 total of \$2.1 billion.
- Data provided by CPAI illustrates expenditure splits between development and maintenance activity (including maintenance, repair and replacement) at Prudhoe, Kuparuk and Alpine combined. Development and maintenance expenditures may each include both capital and operating spending; therefore, this data is not comparable to the spending data presented above.
- The CPAI data indicates a doubling of core field maintenance spending between 2005 and 2008 (from \$950 million to \$1.95 billion). Maintenance spending in 2009 and 2010 totaled approximately \$1.8 billion each year. In 2005, approximately 49 percent of CPAI's spending was maintenance related. In 2010, approximately 63 percent was maintenance related.
- CPAI development expenditures increased from \$1 billion in 2005 to a peak of approximately \$1.35 billion in 2008. In 2009 and 2010, development spending totaled approximately \$1.09 billion and \$1.05 billion, respectively.

## **Oil and Gas Industry Activity Indicators**

- The number of permits issued for oil and gas related drilling on the North Slope fell from a combined total of 207 in 2002 to 158 in 2010, according to data from the Alaska Oil and Gas Conservation Commission (AOGCC). Development and service wells account for most of the permits issued. Permits for exploratory drilling were down sharply in 2010, falling from 23 permits in 2009 to none in 2010. Preliminary data indicates three exploratory permits were issued in 2011.
- The number of companies receiving North Slope exploratory drilling permits increased steadily over the past decade, from five in 2001 to 13 in 2009, before dropping sharply to only two in 2010. In 2001, CPAI accounted for 70 percent of the new permits (17 of 24). More recently, in 2010, neither BP nor CPAI held any exploratory well permits.
- Over the past ten years, the number of North Slope development well completions peaked in 2004 at 188. Over the past three years (2008 through 2010), the number of development completions has averaged 131.
- Since 2000, after peaking at 13 rigs in 2001, the number of active drill rigs declined steadily until leveling off at eight rigs in 2006. The Alaska rig count (measured as an annual average) remained at that level through 2010.
- Through the 1990s the Alaska rig count averaged 10, ranging from highs of 12 rigs in 1990 and 1998 and a low of five in 1999.
- The rig count in 2011 is down slightly from 2010, based on monthly averages. The 2010 monthly average (through mid-December) was 7.7 rigs, with a peak of 11 rigs in March and a low point of six (multiple months). In 2011 year-to-date, the average rig count is 6.5, with lows of five in January and April and a high of nine in October.

## **Oil and Gas Industry Recruiting**

McDowell Group contacted oil industry companies to gather information about company recruiting practices, as well as the recruitment and retention challenges the companies face. In all, 30 companies were contacted and representatives from 22 firms participated in interviews and provided information. The companies interviewed represent North Slope oil and gas industry suppliers, service providers, and producers. In total, the interviewed companies employ approximately 6,500 workers in Alaska. The interviewed companies range in size from less than 20 employees to more than 3,000. The results of the interviews indicate the following:

- Many skilled positions, or positions that require extensive experience, are difficult to fill with qualified Alaskans. These include several types of engineering specialties, such as civil, drilling, petroleum, project, facility, process, and process safety engineers. Companies also mentioned well-site leaders, geologists, petrophysicists, geophysicists, surveyors, and MBA-level business professionals with specialized experience.
- Positions in specialty trades that companies find difficult to fill with qualified Alaskans include electricians, pipe handlers, pile drivers, welders, valve technicians, field service technicians, and directional drillers.
- Other positions can be difficult to fill, depending on the circumstances. Quick ramp-ups can require recruiting outside Alaska, as can short-term seasonal construction projects.
- Companies cited other factors that pose challenges to recruiting and retaining Alaskan workers for North Slope positions. Finding Alaskans who are accustomed to (or can adapt to) working remote rotational schedules (such as 2 weeks on/2 weeks off, or 4/2, or 6/2 shift schedules) is a challenge for some firms.
- Several companies said it is a significant challenge to find recruits with high school diplomas, clean driving records, the capacity to pass basic physical fitness and drug tests, and pass criminal background checks. Several companies reported failure rates for these criteria are substantial, sometimes as high as 25 to 30 percent of the post-offer, pre-hire candidate pool.

## Purpose and Scope

The purpose of the study was to prepare a comprehensive analysis of oil and gas industry-related employment on Alaska's North Slope. There are three general areas of investigation. The first is an analysis of current and recent past trends in employment, in terms of job growth (or decline). The oil and gas industry experienced a rapid increase in employment from 2004 through 2008, followed by two cycles of decline, then by growth to record or near-record levels. These relatively sudden shifts in employment raised questions about the real direction of North Slope employment.

The second area of investigation concerns the changing nature of the work being conducted on the North Slope and how that may or may not affect employment. North Slope oil production continues to trend down, reaching new lows each year as production rates from Prudhoe, Kuparuk and Alpine decline. Yet oil and gas industry employment statewide and on the North Slope has recently reached record levels. Identification of the forces driving employment on the North Slope was a key component of this study.

Finally, the scope of this study includes a detailed analysis of nonresident participation in Alaska's oil and gas industry workforce. Nonresidents have always been a significant component of Alaska's labor force, in the oil and gas industry and in other sectors of the economy. Anecdotal reports of increasing nonresident employment on the North Slope, coupled with some published, preliminary government data suggesting such a trend was in fact occurring, led to a call for a detailed analysis of nonresident participation in Alaska's oil and gas industry work force.

## Data Sources and Methods

A variety of data sources were used for this study. The most important source of data was the Alaska Department of Labor and Workforce Development (ADOLWD), Research and Analysis Section. ADOLWD provided a variety of published and unpublished employment, labor force and residency data that were essential to the completion of this report.

It is important to understand the various ADOLWD data sources and how they differ. Monthly and annual employment data provided by ADOLWD includes the Quarterly Census of Employment and Wages (QCEW). This data is compiled from quarterly employment security forms all wage and salary employers are required to file with ADOLWD. Employment data from this source contains actual monthly counts of workers and total quarterly payroll and; therefore, are the most accurate employment and payroll statistics available. It is reported by place of work (rather by the place of worker residency). The data are generally available on a six to nine-month lag. Since 2008, QCEW data are not publically available for individual employers. Due to federal government restrictions, ADOLWD can only publish QCEW employment and payroll data for a particular geographic area or sector if there are three or more firms reporting employment and none of them have more than 80 percent of employment in any given area or sector.

ADOLWD's Civilian Employment Statistics (CES) are released monthly, with statewide and regional time series. The CES does not include payroll data. It is available on a three-week lag and is therefore the most current employment data available. The CES data are estimates based on surveys and subject to revision as QCEW data becomes available.

ADOLWD also publishes annual reports on the residency of the Alaska workforce. ADOLWD cross tabulates employment data with Alaska Permanent Fund Dividend (PFD) data to derive estimates of worker residency by borough/census area and industrial sector.

Other information presented in this report was provided by the Alaska Department of Revenue (historical oil prices and oil production in Alaska) and the Alaska Oil and Gas Conservation Commission (North Slope drilling activity).

In addition to collecting data from government sources, McDowell Group contacted 30 oil industry companies to gather information regarding company recruiting practices, recruitment and retention challenges, and other information concerning oil and gas industry employment in Alaska. The 22 companies interviewed represent North Slope oil and gas industry suppliers, service providers, and producers. A more extensive interview was held with CH2M Hill, one of Alaska's largest oilfield support firms, to develop a brief case study of workforce development and Alaska residency issues. The study team also contacted representatives of several unions (such as AFL-CIO, IBEW, Laborers, etc.), introducing the study and inviting input on the status of North Slope employment.

The report includes five chapters. Chapter 1 provides a broad overview of data that summarizes recent trends in North Slope production and price, oil industry spending, drilling activity, and other trends. Together this information provides the necessary context to evaluate employment-related data presented in following chapters. Chapter 2 provides detailed employment and payroll statistics for the oil and gas industry in Alaska and the North Slope in particular. Chapter 3 addresses the issue of oil and gas industry workforce residency. It includes detailed historical trends for the industry overall as well as key firms in the oil and gas sector. An oil and gas industry occupational analysis is provided in Chapter 4, including tabulation of key occupational trends and characteristics such as nonresident participation and demographic (age) characteristics. Finally, Chapter 5 summarizes the results of a survey of oil and gas industry firms concerning employee recruiting practices. The appendices (available in electronic format only) include the original unpublished data compiled at the request of McDowell Group by ADOLWD for purposes of this study.

# Chapter 1. Trends in Alaska's Oil and Gas Industry

---

The purpose of this chapter is to provide background information about trends and recent events in Alaska's oil and gas industry. This information is intended to provide a broad context from which to consider the detailed oil and gas industry employment data presented in following chapters. For readers interested in greater detail concerning production rates, prices, exploration activity and other data, a wealth of information is available from the Alaska Department of Natural Resources, Division of Oil and Gas; Alaska Department of Revenue, Tax Division; and the Alaska Oil and Gas Conservation Commission.

Information contained in this chapter includes the following:

- North Slope oil production and price trends
- Drilling activity trends
- Overall Alaska oil industry spending trends

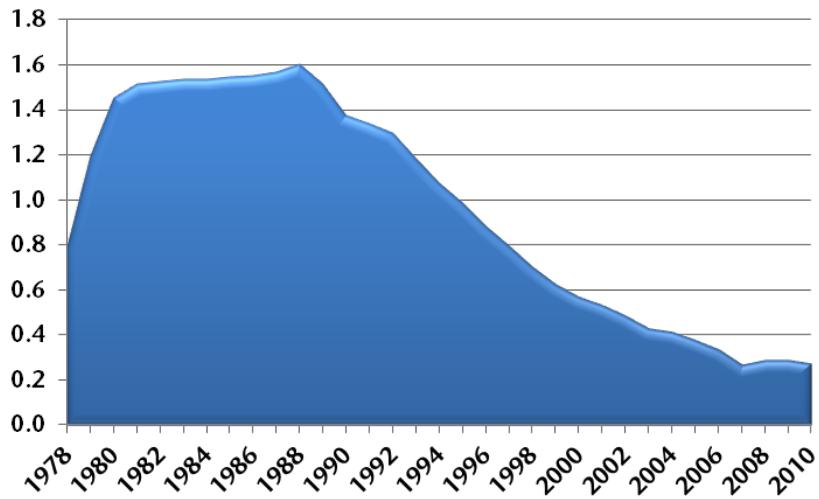
As the reader will note, none of the activity indicators alone explain trends in North Slope employment. However, together they offer insight into the various forces at work shaping oil industry employment in Alaska.

## Production Trends

Since the first oil flowed through the Trans-Alaska Pipeline System (TAPS) in 1977, the line has transported more than 16 billion barrels of oil from the North Slope to Valdez. Oil flows reached a peak of 2.1 million barrels per day in the late 1980s. Over the last few decades, North Slope production has declined to a little less than 644,000 barrels per day in 2010. Flows have dropped by an average of 5.4 percent per year.

Historically, the majority of oil flowing through TAPS originated from the Prudhoe Bay field. Prudhoe Bay oil production peaked in 1988 at 1.6 million barrels per day. Since that time, Prudhoe Bay production has declined at a relatively steady rate to 277,000 barrels per day in 2010.

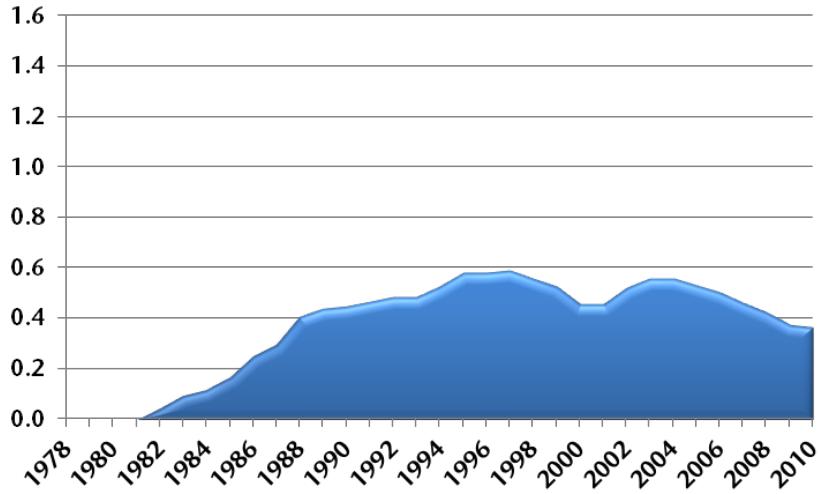
**Figure 1: Annual Prudhoe Crude Oil Production History, 1978-2010  
(in million barrels/day)**



Source: Alaska Department of Revenue, Tax Division, 2010.

As Prudhoe Bay production declined, smaller neighboring fields on the North Slope came on line. Combined throughput for the North Slope fields outside of Prudhoe Bay averaged 480,000 barrels per day between 2001 and 2010.

**Figure 2: Annual North Slope Crude Oil Production History, Excluding Prudhoe Bay, 1978-2010  
(in million barrels/day)**



Source: Alaska Department of Revenue, Tax Division, 2010.

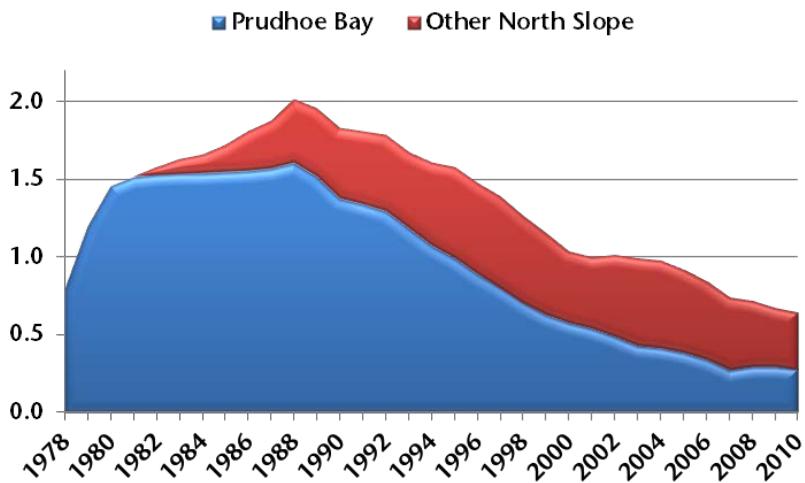
**Table 1: Annual North Slope Crude Oil Production History, 2001-2010  
(in million barrels/day)**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Prudhoe Bay	0.536	0.486	0.429	0.414	0.380	0.335	0.271	0.291	0.291	0.277
PBU Satellites	0.007	0.030	0.045	0.052	0.043	0.041	0.043	0.034	0.037	0.036
GPMA	0.088	0.073	0.065	0.060	0.055	0.048	0.037	0.044	0.038	0.034
Kuparuk	0.197	0.174	0.160	0.154	0.141	0.133	0.121	0.113	0.106	0.099
Kuparuk Satellites	0.031	0.041	0.052	0.049	0.051	0.043	0.044	0.038	0.036	0.035
Milne Point	0.052	0.052	0.051	0.051	0.049	0.041	0.033	0.033	0.031	0.028
Endicott	0.037	0.033	0.029	0.028	0.020	0.021	0.016	0.014	0.014	0.013
Alpine	0.045	0.096	0.099	0.099	0.105	0.123	0.103	0.079	0.063	0.058
Fiord							0.011	0.018	0.021	0.024
Nanuq							0.010	0.019	0.022	0.011
Offshore									0.004	0.009
Northstar		0.025	0.059	0.066	0.068	0.055	0.045	0.034	0.027	0.020
<b>Total ANS</b>	<b>0.993</b>	<b>1.010</b>	<b>0.991</b>	<b>0.974</b>	<b>0.911</b>	<b>0.840</b>	<b>0.734</b>	<b>0.716</b>	<b>0.693</b>	<b>0.644</b>

Source: Alaska Department of Revenue, Tax Division, 2010.

Total production from the North Slope units outside of Prudhoe Bay, including large units such as Kuparuk and Alpine and their satellite fields, has outpaced Prudhoe Bay production for the past decade. Production in these fields as a whole, however, is also declining. Combined, the fields outside of Prudhoe Bay produced 367,000 barrels per day in 2010, the lowest level in over 10 years.

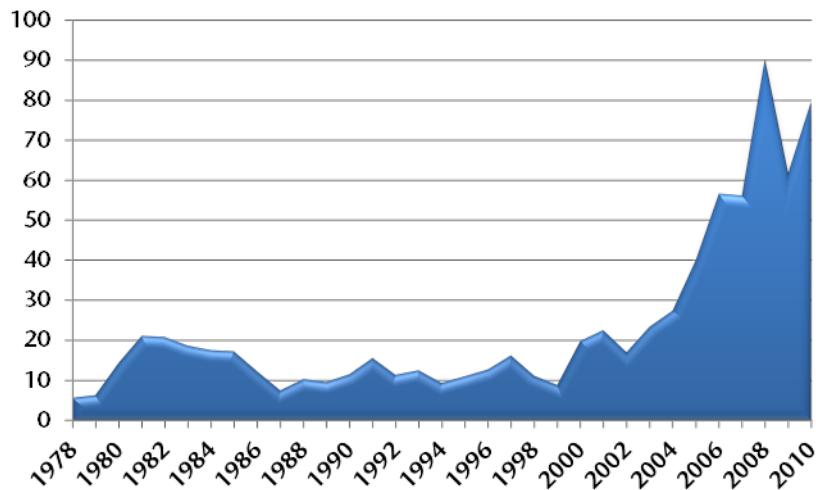
**Figure 3: Average Annual Daily Alaska Crude Oil Production, 1978-2010  
(in million barrels/day)**



Source: Alaska Department of Revenue, Tax Division, 2010.

High oil prices have contributed to high annual production value despite declining oil production. Oil prices have climbed sharply over the past decade. The annual average North Slope price at the wellhead remained below \$25 per barrel for the first twenty years of TAPS operations. Then, between 2003 and 2009, prices rose from an annual fiscal year average of \$27.46 to \$61.86 per barrel. Prices spiked at an annual average of \$90.46 in 2008. North Slope crude oil production total wellhead value increased from \$7.5 billion in 2000 to \$18.8 billion in 2010 (with a high of \$23.6 billion in 2008).

**Figure 4: Annual Alaska North Slope Wellhead Price (\$/barrel), 1978-2009**



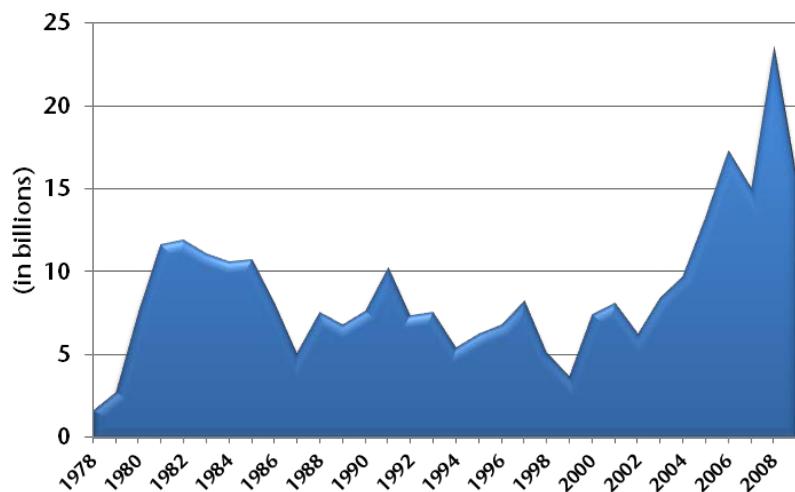
Source: Alaska Department of Revenue, Tax Division, 2010.

**Table 2: Annual Alaska North Slope Wellhead Price, 1978-2009**

Year	\$ per barrel	Year	\$ per barrel
1978	\$5.69	1994	\$9.38
1979	\$6.35	1995	\$11.04
1980	\$14.41	1996	\$12.77
1981	\$21.13	1997	\$16.28
1982	\$20.87	1998	\$11.23
1983	\$18.70	1999	\$8.88
1984	\$17.58	2000	\$19.87
1985	\$17.30	2001	\$22.56
1986	\$12.31	2002	\$17.04
1987	\$7.53	2003	\$23.42
1988	\$10.36	2004	\$27.46
1989	\$9.59	2005	\$40.12
1990	\$11.54	2006	\$56.69
1991	\$15.65	2007	\$56.20
1992	\$11.44	2008	\$90.46
1993	\$12.54	2009	\$61.86

Source: Alaska Department of Revenue, Tax Division, 2010.

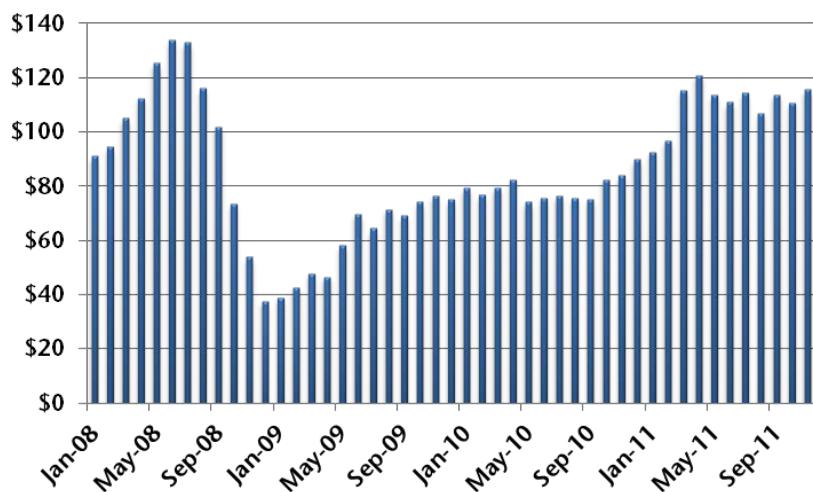
**Figure 5: Total Annual Alaska North Slope Crude Oil Wellhead Value, 1978-2010  
(in \$billions)**



Source: Alaska Department of Revenue, Tax Division, 2010.

The most recent monthly oil price data shows a reasonably steady increase since bottoming in December 2008 (after reaching historical record highs earlier in 2008). As of November 2011, the ANS West Coast price stood at \$115.67/barrel, up from \$37.70/barrel in December 2009.

**Figure 6: Alaska North Slope West Coast Monthly Prices, Price Per Barrel,  
January 2008-November 2011**



Source: Alaska Department of Revenue, Tax Division, 2010.

**Table 3: Alaska North Slope West Coast Monthly Prices, Price Per Barrel, January 2008-November 2011**

Month	2008	2009	2010	2011
January	\$91.16	\$39.01	\$79.34	\$92.56
February	94.42	42.78	76.74	96.79
March	105.06	47.75	79.45	115.34
April	112.37	46.56	82.23	120.86
May	125.41	58.23	74.23	113.57
June	133.78	69.80	75.66	111.08
July	132.87	64.53	76.53	114.47
August	115.98	71.52	75.78	106.95
September	101.86	69.20	75.27	113.75
October	73.65	74.28	82.41	110.85
November	53.94	76.52	83.93	115.67
December	37.70	75.12	89.75	n/a

Note: N/A indicates not available at time of this study's preparation.

Source: Alaska Department of Revenue, Tax Division.

## Indicators of Oil and Gas Industry Activity

### Oil and Gas Industry Spending

Reported oil and gas industry spending has increased steadily since 2007. Increasing operating expenditures have accounted for most of the rise. Operating expenditures (Opex) totaled \$2.61 billion in FY2011, \$1 billion more than the FY2007 total of just under \$1.6 billion. Meantime capital expenditures (Capex) totaled \$2.3 billion in FY2011, slightly below the FY2010 level and 11 percent above the FY2007 total of \$2.1 billion. In total, annual North Slope spending increased just under \$1.3 billion from FY2007 to FY2011. The spending data presented in the following table is published by the Alaska Department of Revenue and is based on unaudited company reports filed with the State for oil production taxation-related purposes.

Prudhoe Bay infrastructure renewal has been an important driver of North Slope related spending. BP spent \$500 million replacing 16 miles of oil transit pipeline, including rebuilding the main Prudhoe Bay oil delivery system and related facilities. Expenditures on Prudhoe Bay renewal are ongoing. BP has stated that one-third of its \$800 million 2011 capital budget is being spent on infrastructure renewal.

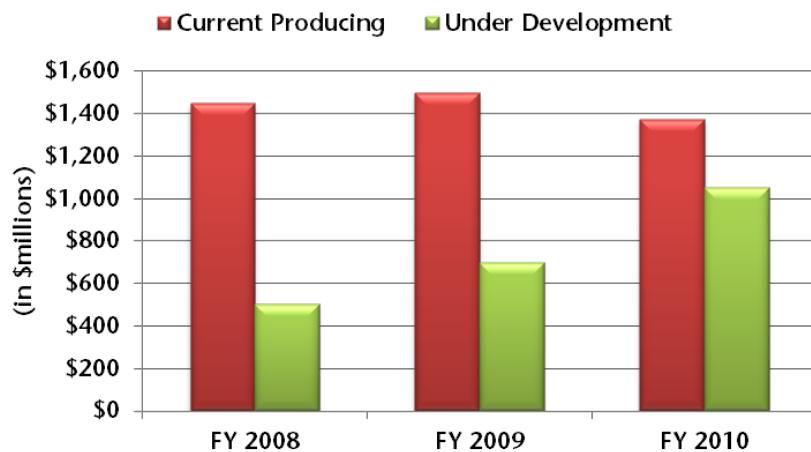
**Table 4: Oil and Gas Industry North Slope Related Spending (\$millions), FY2007-2011**

Fiscal Year	Capital Expenditures	Operating Expenditures	Total Spending
2007	2,081	1,578	3,659
2008	1,881	1,967	3,848
2009	2,230	2,085	4,315
2010	2,389	2,270	4,658
2011	2,317	2,614	4,931

Source: Alaska Department of Revenue, Tax Division.

Other recently released data indicates capital spending in support of currently producing fields (Prudhoe, Kuparuk and Alpine) has been flat or down slightly, while Capex on new fields (Oooguruk, Nikaitchuq, Point Thomson and other North Slope exploration) has increased sharply.<sup>1</sup>

**Figure 7: Capital Expenditures Producing Units and Units Under Development, FY2008-2010**



Note: Units under development include Oooguruk, Nikaitchuq, and Point Thomson, NPRA, and other North Slope.

Source: Alaska Department of Revenue.

For purposes of this study ConocoPhillips (CPAI) provided data that illustrates expenditure splits between development and maintenance (including maintenance, repair and replacement) at Prudhoe, Kuparuk, and Alpine combined. Development and maintenance expenditures can each include both capital and operating spending, therefore this data is not comparable to the data presented above. The CPAI data indicates a doubling of maintenance spending at the core fields between 2005 and 2008 (from approximately \$950 million to \$1.95 billion). Maintenance spending in 2009 and 2010 totaled approximately \$1.8 billion each year. Meantime, development expenditures increased from slightly under \$1 billion in 2005 to a peak of approximately \$1.35 billion in 2008 (a 35 percent increase). In 2009 and 2010, development spending totaled \$1.1 billion and \$1.05 billion, respectively. In 2005, approximately 49 percent of CPAI's spending was maintenance related. In 2010, approximately 63 percent was maintenance related.

**Table 5: ConocoPhillips North Slope Related Spending (\$millions), 2005-2010**

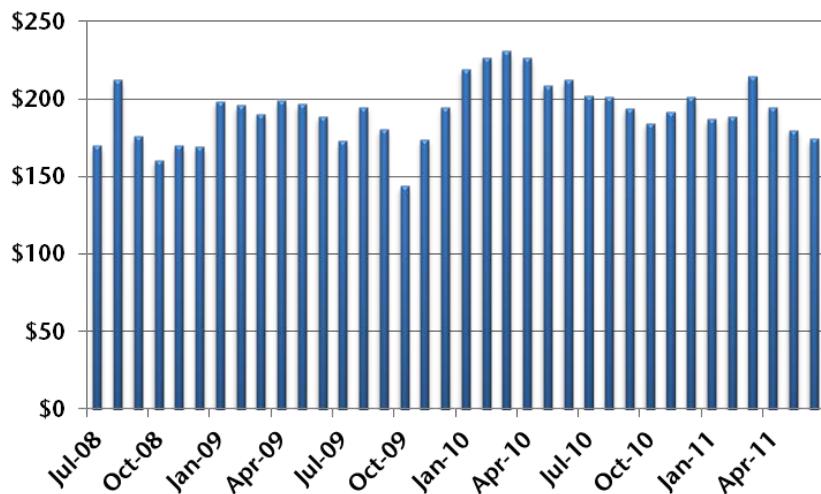
Fiscal Year	Development Expenditures	Maintenance Expenditures	Total Spending	Percent Maintenance
2005	\$1,000	\$950	\$1,950	49%
2006	1,200	1,250	2,400	51%
2007	1,200	1,500	2,650	56%
2008	1,350	1,950	3,300	59%
2009	1,100	1,800	2,900	62%
2010	1,050	1,800	2,850	63%

All figures have been rounded to nearest \$50 million.

Source: ConocoPhillips.

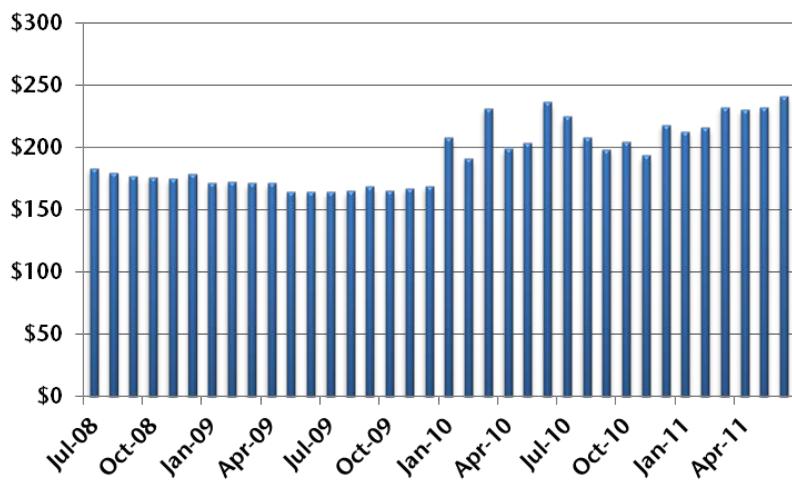
<sup>1</sup> Source: Alaska's Oil Investment Tax Strategy: Establishing a Competitive Alaska, Commonwealth North, 2011.

**Figure 8: North Slope CAPEX Monthly Expenditures  
(in \$millions), July 2008-June 2011**



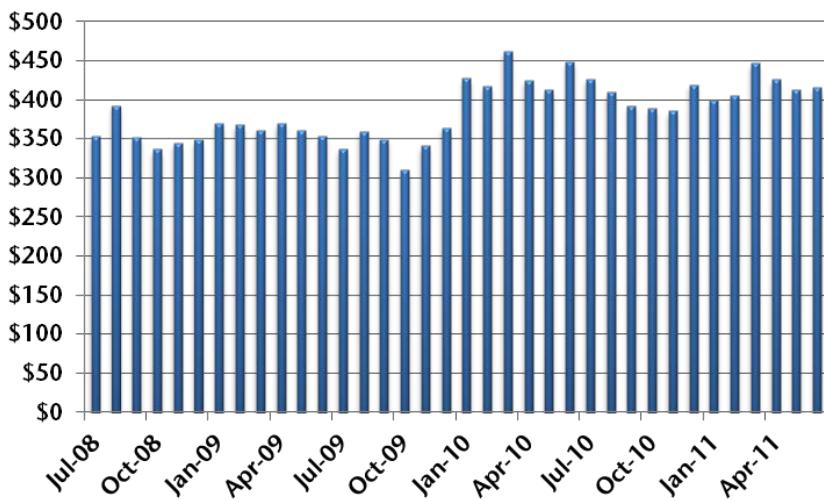
Source: Alaska Department of Revenue.

**Figure 9: North Slope OPEX Monthly Expenditures  
(in \$millions), July 2008-June 2011**



Source: Alaska Department of Revenue.

**Figure 10: Combined North Slope Monthly Capital and Operating Expenditures (in \$millions), July 2008-June 2011**



Source: Alaska Department of Revenue.

**Table 6: North Slope CAPEX and OPEX Combined Monthly Expenditures (in \$millions), July 2008-June 2011**

Time Period	North Slope CAPEX	North Slope OPEX	Total	Time Period	North Slope CAPEX	North Slope OPEX	Total
July 2008	\$170	\$183	\$354	January 2010	\$220	\$208	\$428
August 2008	213	180	393	February 2010	227	191	418
September 2008	176	177	353	March 2010	231	232	463
October 2008	161	176	337	April 2010	227	199	426
November 2008	170	175	345	May 2010	209	204	413
December 2008	170	179	349	June 2010	213	236	449
January 2009	199	171	370	July 2010	202	225	427
February 2009	196	173	369	August 2010	202	208	410
March 2009	191	171	362	September 2010	194	199	393
April 2009	199	171	371	October 2010	185	205	380
May 2009	197	164	361	November 2010	192	194	386
June 2009	189	165	354	December 2010	201	218	419
July 2009	173	164	338	January 2011	187	213	400
August 2009	195	165	360	February 2011	189	216	408
September 2009	181	169	349	March 2011	215	232	450
October 2009	144	166	310	April 2011	195	231	426
November 2009	174	167	341	May 2011	180	232	412
December 2009	195	169	365	June 2011	174	242	419

Source: Alaska Department of Revenue.

## Companies Active in Alaska's Oil and Gas Industry

Another indicator of oil and gas industry activity on the North Slope is the number of companies filling annual production tax returns and the number of taxpayers. The number of taxpayers has increased steadily since 2007 (11 taxpayers) to 2010 (18 tax payers). A range of tax credits, established in 2006 and 2007, for certain qualifying capital and exploration expenditures, incentivized non-producing companies to file production tax returns.

**Table 7: Oil and Gas Production Tax, Number of Tax Returns Filed and Tax Payers, 2005-2010**

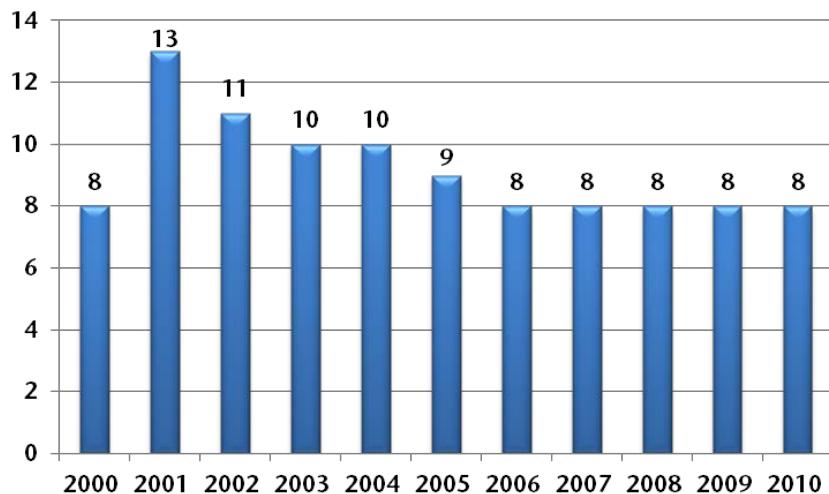
Fiscal Year	Returns	Taxpayers
2005	n/a	14
2006	n/a	13
2007	38	11
2008	18	13
2009	26	17
2010	47	18

Source: Alaska Department of Revenue, Tax Division Annual Reports.

### **Baker Hughes Rig Count**

The Baker Hughes North American Rotary Rig Count is a weekly census of the number of drilling rigs actively exploring for or developing oil or natural gas in the United States and Canada. "Rig count" is a measure of drilling activity to explore, develop, and produce oil or natural gas. Non-rotary rigs, such as coiled tubing and workover rigs, may be included depending on how they are utilized. Since 2000, after peaking at 13 rigs in 2001, the number of active rigs (measured in terms of annual average) declined steadily until leveling off at eight rigs in 2006. The Alaska rig count remained at that number through 2010. Through the 1990s the Alaska rig count averaged 10, ranging between highs of 12 rigs in 1990 and 1998 and a low of five in 1999. Changes in rig count over the long-term do not necessarily reflect decreased exploration/development activity, as technological advances can increase the operational efficiency of the drilling fleet.

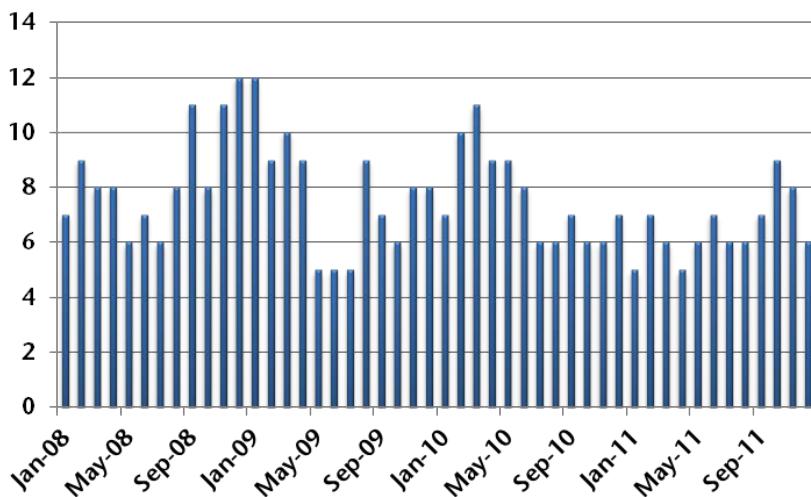
**Figure 11: Baker Hughes Annual Average Alaska Drill Rig Count, 2000-2010**



Source: Baker Hughes.

The rig count in 2011 is down slightly from 2010, based on monthly averages. The January through mid-December 2010 monthly average was 7.7 rigs, with a peak of 11 rigs in March and a low of six (in several months). In 2011 year-to-date, the average rig count is 6.5, with lows of five in January and April and a high of nine in October.

**Figure 12: Monthly Average Alaska Drill Rig Count, January 2008-December 2011**



Source: Baker Hughes.

**Table 8: Monthly Average of Rotary Rigs in Alaska, 2008-2011**

	2008	2009	2010	2011
January	7	12	7	5
February	9	9	10	7
March	8	10	11	6
April	8	9	9	5
May	6	5	9	6
June	7	5	8	7
July	6	5	6	6
August	8	9	6	6
September	11	7	7	7
October	8	6	6	9
November	11	8	6	8
December	12	8	7	6

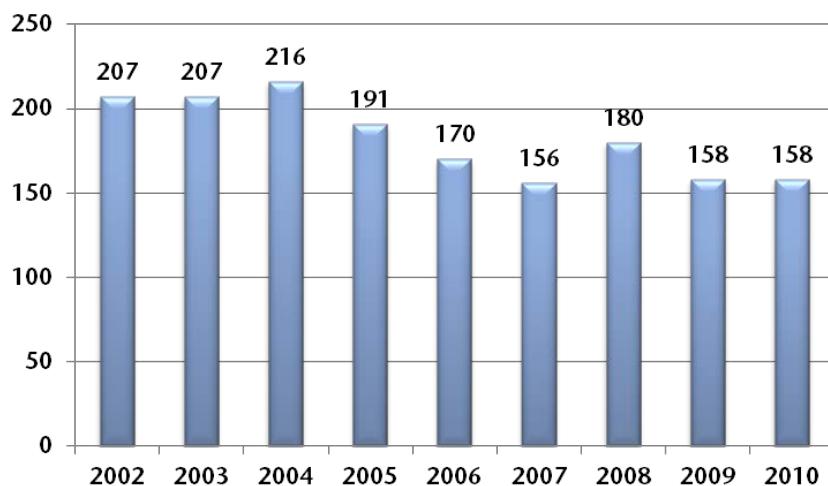
Source: Baker Hughes.

## Drilling Permits

The number of permits issued for North Slope oil and gas related drilling fell from a combined total of 207 in 2002 to 158 in 2010, according to data from the Alaska Oil and Gas Conservation Commission (AOGCC).

Development and service wells typically account for most of permits issued. Service wells include gas injection, water injection, water-alternating-gas injection, saltwater disposal, water supply for injection, and others.

**Figure 13: Number of Oil and Gas Drilling Permits Issued in North Slope, 2001-2010**



Source: Alaska Oil and Gas Conservation Commission.

**Table 9: North Slope Oil and Gas Drilling Permits, 2002-2010**

Year	Development, Service & Other)	Exploratory	Total
2002	190	17	207
2003	202	5	207
2004	207	9	216
2005	174	17	191
2006	159	11	170
2007	142	14	156
2008	157	23	180
2009	145	13	158
2010	158	0	158

Source: Alaska Oil and Gas Conservation Commission online database.

The number of companies receiving exploratory drilling permits increased steadily over the past decade, from five in 2001 to 13 in 2009, before dropping sharply to zero in 2010. In 2001, CPAI accounted for 70 percent of the permits (17 of 24). Partial year 2011 data indicates a slight uptick in exploratory permit issuance, with a total of three permits issued as of December (one for CPAI and two for Brooks Range Petroleum).

**Table 10: North Slope Oil and Gas Exploratory Well Permits Issued, 2002-2010**

Year	No. of Permits	No. of Companies	BP	ConocoPhillips	DOI	Others
2002	17	4	2	10	0	5
2003	5	3	0	3	0	2
2004	9	3	0	5	0	4
2005	17	5	0	7	1	10
2006	11	6	1	3	0	7
2007	14	8	4	1	1	9
2008	23	7	0	3	8	20
2009	13	8	0	2	2	11
2010	0	0	0	0	0	0

Source: Alaska Oil and Gas Conservation Commission online database.

**Table 11: North Slope Drill Permits Issued, by Company, 2008-2011**

Company	Drill	Re-enter Redrill	Spoke/Lateral	Total	Exploratory
<b>2008</b>					
BP Exploration	17	58	21	96	0
CPAI	23	9	16	48	3
Pioneer Resources	13	0	0	13	0
Union Oil Co	4	0	0	4	4
Anadarko	3	0	0	3	3
Brooks Range Pet.	1	2	0	3	3
eni petroleum	3	0	0	3	0
Renaissance	1	0	0	1	1
Savant Alaska	1	0	0	1	1
<b>2009</b>					
BP Exploration	12	66	16	94	0
CPAI	15	8	23	46	2
Pioneer Resources	3	2	0	5	0
Union Oil Co	2	0	0	2	2
Anadarko	1	0	0	1	1
Brooks Range Pet.	1	2	0	3	2
eni petroleum	1	0	0	1	0
Savant Alaska	1	0	0	1	1
Exxon Mobil	2	0	0	2	2
UltraStar Exploration	1	0	0	1	1
<b>2010</b>					
BP Exploration	7	47	11	65	0
CPAI	16	12	48	76	0
Pioneer Resources	6	0	3	9	0
eni petroleum	7	0	0	7	0
Savant Alaska	0	1	0	1	0
<b>2011</b>					
BP Exploration	8	28	9	45	0
CPAI	8	9	32	49	1
Pioneer Resources	5	0	0	5	0
Brooks Range Pet.	1	2	0	3	2
eni petroleum	13	0	0	13	0

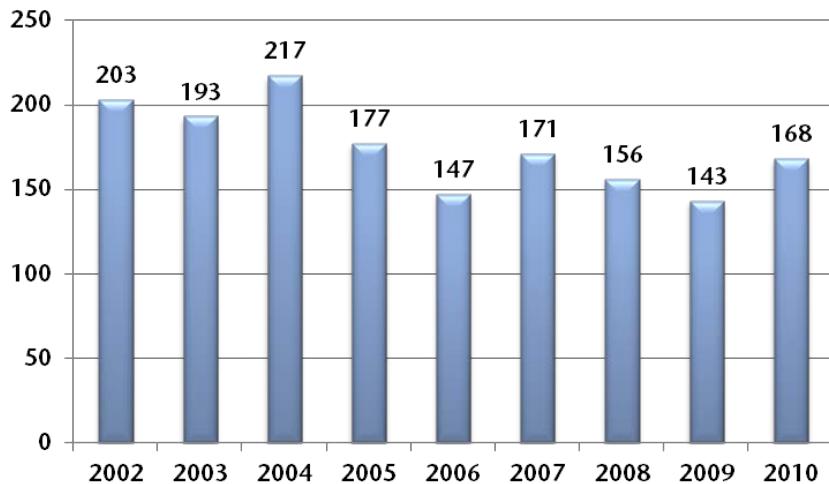
Source: Alaska Oil and Gas Conservation Commission online database.

## Well Completions and Workovers

AOGCC also maintains data on well completions and workovers. A well completion is the final step in the drilling process in preparation for producing oil or gas, or is otherwise completed if not a production well (such as service wells). A workover is performed when a well is in need of major repairs or modifications.

Over the past ten years, the number of development well completions peaked in 2004 at 217 completions. Over the past three years (2008 through 2010), the number of development completions has averaged 131.

**Figure 14: North Slope Oil and Gas Well Completions, 2002-2010**



**Table 12: North Slope Oil and Gas Well/Wellbore Completions, by Type, 2002-2010**

Year	Development	Service	Exploratory	Total
2002	144	48	11	203
2003	139	50	4	193
2004	154	54	9	217
2005	111	54	12	177
2006	96	42	9	147
2007	104	49	18	171
2008	112	27	17	156
2009	108	25	10	143
2010	120	44	4	168

Source: Alaska Oil and Gas Conservation Commission online database.

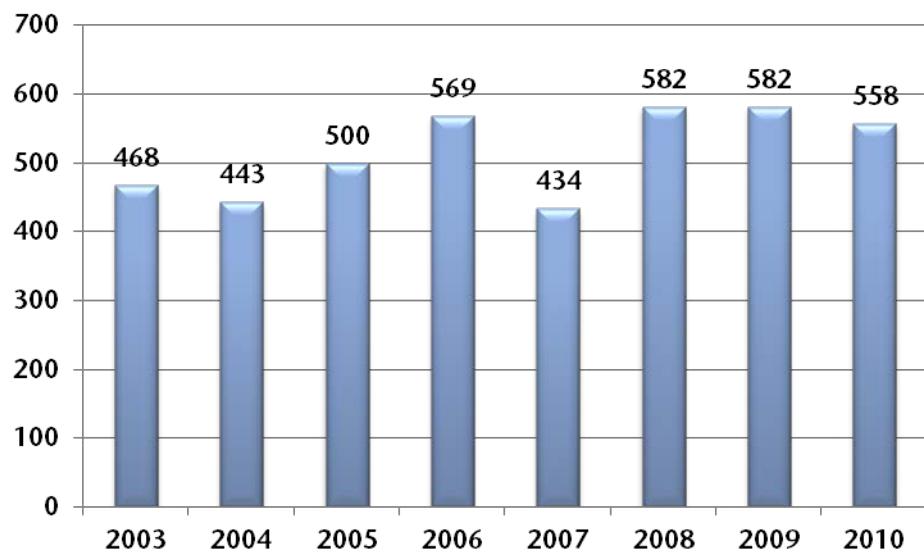
**Table 13: North Slope Oil and Gas Well Completions, 2002-2010**

Year	No. of Permits	No. of Companies	BP	CPAI	Others
2002	203	3	146	56	1
2003	193	3	135	55	3
2004	217	5	141	72	4
2005	177	4	98	72	7
2006	147	5	72	71	4
2007	171	7	86	74	11
2008	156	8	86	51	19
2009	143	8	82	41	20
2010	168	7	83	65	20

Source: Alaska Oil and Gas Conservation Commission online database.

The number of workovers on existing wells has generally trended up over the past ten years. There were 558 workovers in 2010, slightly below the 2008 and 2009 level of 582 workovers. Since 2003, the annual number of workovers has averaged 517, with a low point of 434 in 2007 and high points the following two years.

**Figure 15: Number of North Slope Well Workovers, 2003-2010**



Source: Alaska Oil and Gas Conservation Commission.

# Chapter 2. Statewide and North Slope Employment

---

Oil and gas industry related jobs are scattered throughout Alaska, with the lion's share located on the North Slope. Oil industry jobs are also based in Anchorage, Kenai Peninsula Borough, Fairbanks, and Valdez. Further, Alaskan workers who hold oil and gas industry jobs reside in communities in virtually every region of the state. This chapter describes in detail the oil and gas industry employment picture in Alaska, including the distribution of oil and gas industry jobs around the state and recent trends in statewide and regional employment. Particular emphasis is placed on trends in North Slope employment.

## Recent Employment in Alaska's Oil and Gas Industry

Alaska's oil and gas industry includes a variety of activities, including exploration and development work, oil and gas production, and a myriad of related oil field services, pipeline operations, and refinery operations. Including all of the indirect and induced employment connected with the oil and gas industry in Alaska virtually every sector of the economy has jobs linked with the industry.

This analysis focuses on two aspects of oil and gas industry employment in Alaska. First, it describes employment in the sectors that customarily define the oil and gas industry in published employment and payroll data. Specifically, this includes North American Industrial Classification System (NAICS) sectors 211 (Oil and Gas Extraction), 213111 (Drilling Oil and Gas Wells), and 213112 (Support Activities for Oil and Gas Operations). Statewide employment and payroll data is available from ADOLWD for these sectors, showing monthly employment and annual payroll. Local-level data may or may not be available depending on the number and size of firms reporting employment in each area. Due to federal government restrictions, ADOLWD can only publish employment and payroll data if there are three or more firms reporting employment and none of them have more than 80 percent of employment in any given sector.

The second aspect of this analysis of oil and gas industry related employment focuses on all jobs in the Prudhoe Bay area, including those not categorized in the specific oil and gas sectors noted above. As is illustrated below, North Slope jobs are reported by a variety of firms in a broad range of business sectors.

## Summary of Reported Oil and Gas Industry Employment

Firms reporting employment in the Oil and Gas Extraction sector (211) in Alaska in 2010 are listed in the following table. In 2010, firms reporting employment in the oil and gas extraction sector had total (all firms combined) average monthly employment of 3,551, with total annual payroll of \$608.3 million, according to ADOLWD. BP Exploration (Alaska) Inc. was Alaska's seventh largest private sector employer overall in terms of average monthly employment. CPAI was ranked 17<sup>th</sup>.

**Table 14: Firms Reporting Employment in the Oil and Gas Extraction Sector in Alaska, 2010**

Average Monthly Employment	
BP Exploration (Alaska) Inc.	2,000 to 2,249
ConocoPhillips Company	1,000 to 1,249
Chevron USA Inc.	250 to 499
Pioneer Natural Resources	50 to 99
Amoco Production Company	50 to 99
Exxon Mobil Corporation	20 to 49
XTO Energy Inc.	20 to 49
Cook Inlet Energy	10 to 19
Statoil Gulf Services	0 to 4
Fex GP Inc.	0 to 4
Anadarko Petroleum Corporation	0 to 4
Broken Hill Proprietary USA Inc.	0 to 4
Renaissance Alaska LLC	0 to 4

Source: ADOLWD, QCEW.

A total of 13 firms reported employment in the Drilling Oil and Gas Wells sector (NAICS 213111) in 2010. The largest in terms of Alaska employment were Nabors Alaska Drilling and Doyon Drilling.

**Table 15: Firms Reporting Employment in the Drilling Oil and Gas Wells Sector in Alaska, 2010**

Average Monthly Employment	
Nabors Alaska Drilling	250 to 499
Doyon Drilling	250 to 499
Inlet Drilling AK Inc.	20 to 49
Kuukpik Drilling LLC	20 to 49
Aurora Well Service	10 to 19
Rowan Drilling US	5 to 9
Geo-Pilots Inc	0 to 4
S&S Drilling	0 to 4
Well Site Services Inc	0 to 4
Workstrings LLC	0 to 4
CNC Drilling LLC	0 to 4
R&R Drilling LLC	0 to 4

Source: ADOLWD, QCEW.

Most jobs in Alaska's oil and gas industry are in the Support Activities for Oil and Gas Operations sector (NAICS 213112). Fifty-seven (57) firms reported employment in this sector in 2010. Firms with average employment of 50 or more workers in 2010 are identified in the following table.

**Table 16: Firms Reporting Average Employment of 50 or More in the Support Activities for Oil and Gas Operations Sector in Alaska, 2010**

	Average Monthly Employment
ASRC Energy Services	2,500 to 2,749
CH2M HILL	1,750 to 1,999
Udelhoven Oilfield System Services	500 to 749
Schlumberger Technologies	500 to 749
ASRC Energy Services – Houston Contracting	250 to 499
Peak Oilfield Services Company	250 to 499
Halliburton Energy Services	250 to 499
Norcon	250 to 499
Baker Hughes Oilfield Operations	100 to 249
Nordic-Calista Services No 1	100 to 249
Little Red Services	100 to 249
M-I LLC	100 to 249
Kakivik Asset Management LLC	100 to 249
Marathon Oil Company	100 to 249
SolstenXP Inc	50 to 99
Colville Inc	50 to 99
Fairweather LLC	50 to 99

Source: ADOLWD, QCEW.

In these three sectors combined (Oil and Gas Extraction, Drilling Oil and Gas Wells, and Support Activities for Oil and Gas Operations), which together are customarily defined in published data as the oil and gas industry, employment averaged 12,752 jobs in 2010, accounting for \$1.52 billion in total annual payroll.

Employment in other sectors of Alaska's oil and gas industry includes jobs with the Alyeska Pipeline Service Company (Trans Alaska Pipeline System). Pipeline employment in Alaska is classified in sector 4861 (Pipeline Transportation of Crude Oil); however, because Alyeska accounts for more than 80 percent of the employment in that sector, that data is confidential and not published by ADOLWD. In 2010, several other firms reported employment in this sector, including Marathon Pipeline Company, ConocoPhillips Pipeline Company, and Kenai Pipeline Company, all reporting fewer than 10 jobs. Data provided by Alyeska Pipeline Service Company indicates the firm's employment totals approximately 800 payroll workers, plus another 1,000 contract workers (who would not be reported in sector 4861). The bulk of Alyeska's direct employment is reported in Anchorage and Valdez, though significant numbers of workers are also employed in Prudhoe Bay and Fairbanks.

**Table 17: Alyeska Pipeline Service Company Direct Employment, by Location, 2010**

Location	Employment Range
Anchorage	250-499
Valdez	100-249
Prudhoe Bay	50-99
Fairbanks	20-49
All Other	<25

Source: ADOLWD, QCEW

Refinery operations create jobs in Kenai, Valdez and Fairbanks. Flint Hills Resources operates a refinery in Fairbanks, with a capacity of 220,000 barrels/day. Petro Star has refineries in Valdez (60,000 bbl/day) and Fairbanks (22,000 bbl/day). Tesoro Alaska operates a refinery in Kenai

In total, Alaska refinery sector accounted for a monthly average of 404 jobs and \$41.2 million in annual payroll in 2010.

This overview of the primary sources of employment in Alaska's oil and gas industry does not include all oil and gas industry related employment. A wide variety of firms, including camp support services firms, a range of professional services firms, construction companies, transportation providers, and others provide services in support of oil and gas activities on the North Slope and elsewhere in the state. Employment with these firms is described in more detail elsewhere in this report.

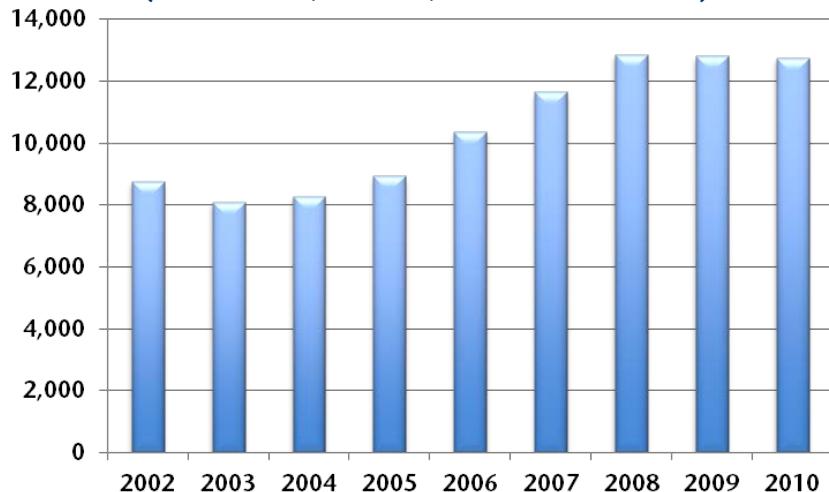
## Statewide Trends in Oil and Gas Sector Employment

While published employment data from ADOLWD reflecting employment in oil and gas extraction, drilling oil and gas wells, and support services for oil and gas operations (NAICS codes 211, 213111, 213112) does not capture all oil and gas industry employment in Alaska, it does provide a useful measure of employment trends over time. For purposes of the following discussion, the term "oil and gas industry" includes only the three sectors in the Alaska economy that are purely oil and gas industry related and for which employment data is routinely published (NAICS codes 211, 213111, 213112).

The following figure illustrates changes in oil and gas industry employment from 2002 through 2010. The accompanying table provides the annual employment data. Oil and gas industry employment bottomed (during the period considered in this study) in 2003 at 8,099 jobs. Over the next five years, the industry added a total of 4,774 jobs, climbing to a peak of 12,873 in 2008 (a 59 percent overall increase). Employment dipped very slightly in each of the next two years, averaging 12,752 jobs in 2010.

Growth occurred in all three oil and gas sectors in the latter half of the decade. Oil and Gas Extraction employment climbed from 2,521 jobs in 2004 to a high-point of 3,606 in 2009, an overall increase of 43 percent. Employment in Drilling for Oil and Gas Wells increased from 720 in 2004 to 1,070 in 2008, a 49 percent jump. The most growth, in absolute and relative terms, occurred in Support Activities for Oil and Gas, where employment climbed from 4,777 jobs in 2003 to 8,280 jobs in 2008, a 73 percent increase. Employment in this sector dipped slightly in 2009 before climbing to 8,324 jobs in 2010.

**Figure 16: Alaska Oil and Gas Industry Average Employment, 2002-2010  
(Sectors 211, 212111, 213112 Combined)**

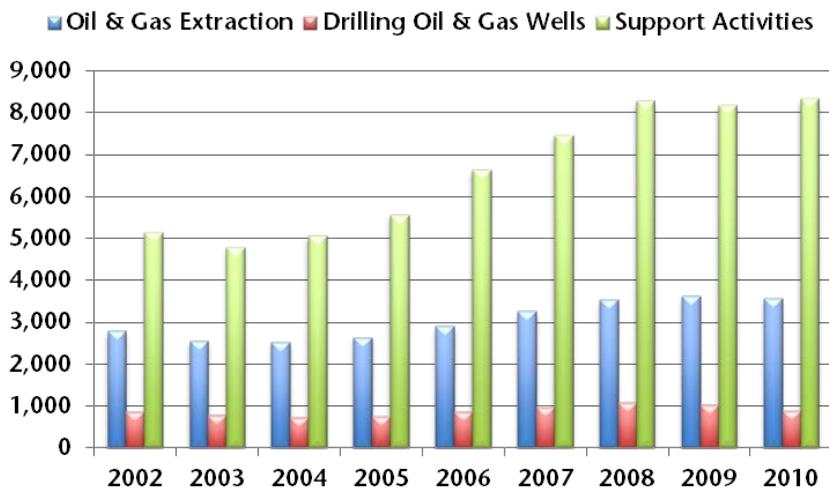


**Table 18: Statewide Oil and Gas Industry (NAICS Sectors 211, 212111, 213112) Employment, Total Annual Payroll and Average Monthly Earnings, 2002-2010**

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Average Employment	8,761	8,099	8,290	8,926	10,378	11,658	12,873	12,817	12,752
Total Annual Payroll (\$million)	\$842.6	\$742.5	\$800.2	\$885.7	\$1,065.4	\$1,265.7	\$1,461.8	\$1,506.4	\$1,522.8
Average Monthly Earnings	\$8,015	\$7,640	\$8,044	\$8,269	\$8,555	\$9,047	\$9,463	\$9,794	\$9,951

Source: ADOLWD, 2011, QCEW

**Figure 17: Annual Alaska Oil and Gas Industry (211, 212111, 213112) Employment Estimates, 2002-2010**



Source: ADOLWD, QCEW.

**Table 19: Statewide Oil and Gas Extraction Industry (NAICS Sector 211) Employment, Total Annual Payroll and Average Monthly Earnings, 2002-2010**

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Average Employment	2,779	2,550	2,521	2,634	2,890	3,245	3,523	3,606	3,551
Total Annual Payroll (\$million)	\$383.2	\$326.4	\$351.2	\$382.9	\$419.2	\$496.0	\$570.1	\$602.4	\$608.3
Average Monthly Earnings	\$11,489	\$10,666	\$11,610	\$12,116	\$12,087	\$12,737	\$13,486	\$13,924	\$14,275

Source: ADOLWD, QCEW.

**Table 20: Statewide Drilling Oil and Gas Wells (NAICS Sector 213111) Employment, Total Annual Payroll and Average Monthly Earnings, 2002-2010**

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Average Employment	856	772	720	743	855	958	1,070	1,030	877
Total Annual Payroll (\$million)	\$62.7	\$57.0	\$53.3	\$60.5	\$79.3	\$99.6	\$103.7	\$96.3	\$82.2
Average Monthly Earnings	\$6,101	\$6,158	\$6,174	\$6,787	\$7,733	\$8,664	\$8,074	\$7,790	\$7,813

Source: ADOLWD, QCEW.

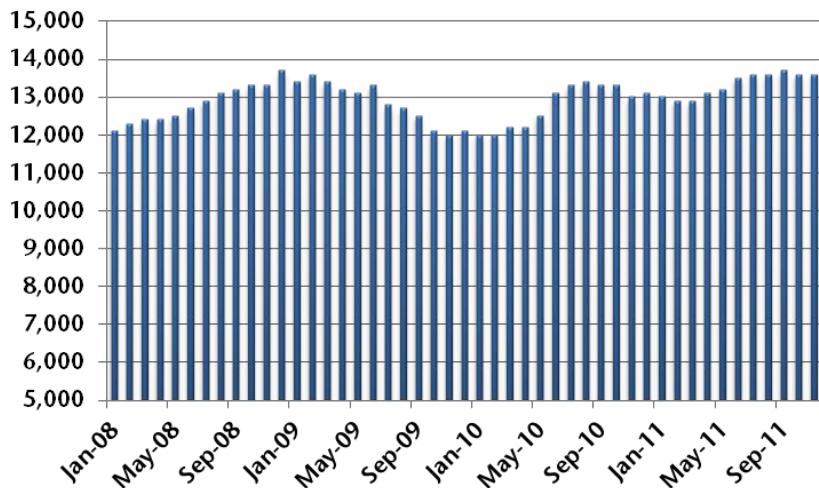
**Table 21: Statewide Support Activities for Oil and Gas Operations (NAICS Sector 213112) Employment, Total Payroll and Average Monthly Earnings, 2002-2010**

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Average Employment	5,126	4,777	5,049	5,549	6,633	7,455	8,280	8,181	8,324
Total Annual Payroll (\$million)	\$396.7	\$359.1	\$395.7	\$442.3	\$566.9	\$670.1	\$788.0	\$807.7	\$832.3
Average Monthly Earnings	\$6,449	\$6,265	\$6,530	\$6,642	\$7,123	\$7,491	\$7,931	\$8,227	\$8,332

Source: ADOLWD, QCEW.

Historically there has been relatively little seasonal fluctuation in oil and gas industry employment in Alaska. Over the past three years monthly employment has hit peaks in December 2008 (13,700 jobs), August 2010 (13,400), and most recently in August 2011 (13,600), according the ADOLWD CES data. Prior to that, for the previous 48 months employment climbed steadily and without interruption. The September 2011 employment estimate for the oil and gas industry was 13,700, matching all-time high employment in the industry. Preliminary November 2011 employment is at 13,600.

**Figure 18: Monthly Statewide Alaska Oil and Gas Employment Estimates, January 2008-November 2011**



Source: ADOLWD, CES.

**Table 22: Monthly Alaska Oil and Gas Employment Estimates, January 2008-November 2011**

	2008	2009	2010	2011
January	12,100	13,400	12,000	13,000
February	12,300	13,600	12,000	12,900
March	12,400	13,400	12,200	12,900
April	12,400	13,200	12,200	13,100
May	12,500	13,100	12,500	13,200
June	12,700	13,300	13,100	13,500
July	12,900	12,800	13,300	13,600
August	13,100	12,700	13,400	13,600
September	13,200	12,500	13,300	13,700
October	13,300	12,100	13,300	13,600
November	13,300	12,000	13,000	13,600
December	13,700	12,100	13,100	N/A

N/A indicates not available at the time of this study's preparation.

November 2011 estimate is preliminary.

Source: ADOLWD, CES.

## Prudhoe Bay Employment

Two-thirds of Alaska's oil and gas industry jobs are located on the North Slope. In 2010, there were an average of 8,445 oil and gas industry (sectors 211, 213111, 213112) jobs in the Prudhoe Bay Zone (which is within the North Slope Borough), 66 percent of all oil and gas industry employment in Alaska. Other significant oil and gas industry employment occurs in Anchorage (2,600 jobs) and the Kenai Peninsula Borough (1,000 jobs). Comparable oil and gas industry employment data for other areas of the state (where some oil and gas industry employment occurs), including Fairbanks, is not available due to confidentiality restrictions.

**Table 23: Statewide and Prudhoe Bay Oil and Gas Industry Employment, 2004-2010**

	2004	2005	2006	2007	2008	2009	2010
Statewide Average Employment	8,290	8,926	10,378	11,658	12,873	12,817	12,752
Prudhoe Bay Average Employment	4,745	5,191	6,295	7,496	8,314	8,429	8,445
Prudhoe Bay % of Total	57%	58%	61%	64%	65%	66%	66%
Other Alaska Employment	3,545	3,735	4,083	4,162	4,559	4,388	4,307
Other % of Total	43%	42%	39%	36%	35%	34%	34%

Source: ADOLWD, QCEW.

In 2010, the oil and gas industry accounted for an annual average of 8,445 jobs and \$859.1 million in total annual payroll. The average monthly wage was \$8,478.

Oil and gas industry employment in Prudhoe Bay has grown at a faster rate than statewide employment. Prudhoe Bay employment increased 78 percent between 2004 and 2010, while statewide oil and gas industry employment increase by 54 percent. Most of the growth in Prudhoe Bay employment occurred between 2004 and 2008.

**Table 24: Prudhoe Bay Private Sector Employment, Payroll and Average Earnings, Annual Percent Change, 2005-2010**

	2005	2006	2007	2008	2009	2010
Annual Average Employment	7%	19%	18%	12%	2%	0%
Total Annual Payroll (\$million)	6%	27%	24%	19%	3%	1%
Annual Average Earnings	0%	7%	6%	6%	1%	1%

Source: ADOLWD, QCEW

Prudhoe Bay employment data is particularly informative because it provides a much more complete picture of oil and gas industry related employment. Essentially all Prudhoe Bay employment is oil and gas industry related, including jobs in the construction sector, transportation, business/professional services, and other sectors, as well as the oil and gas extraction and oil field services sectors. In 2010, employment in Prudhoe Bay averaged 10,446 jobs, accounting for \$993.5 million in payroll. Prudhoe Bay employment has grown in each of the last six years, gaining a total of 4,383 jobs and \$519 million in annual payroll over the 2004 to 2010 period.

**Table 25: Prudhoe Bay Private Sector Employment, Payroll and Average Earnings, 2004-2010**

	2004	2005	2006	2007	2008	2009	2010
Average Employment	6,063	6,471	7,731	9,088	10,200	10,419	10,446
Total Annual Payroll (\$million)	\$474.6	\$504.7	\$642.6	\$798.5	\$948.2	\$980.7	\$993.5
Average Monthly Earnings	\$6,523	\$6,500	\$6,927	\$7,322	\$7,747	\$7,844	\$7,926

Source: ADOLWD, QCEW

Oil and gas industry sectors accounted for 81 percent of all Prudhoe Bay employment in 2010; 8,445 out of 10,446 total jobs. Notably other sectors generated 2,000 jobs in 2010. These jobs are due solely to oil and gas industry activity, but are not reported as such. Employment in these other sectors has grown substantially since 2004, though at a pace slower than in the oil and gas sectors, with overall increases of 52 percent and 78 percent respectively.

**Table 26: Prudhoe Bay Oil & Gas Industry and All Other Private Sector Employment and Payroll, 2004-2010**

	2004	2005	2006	2007	2008	2009	2010
<b>Total Employment</b>	<b>6,063</b>	<b>6,471</b>	<b>7,731</b>	<b>9,088</b>	<b>10,200</b>	<b>10,419</b>	<b>10,446</b>
Oil & Gas Sector Employment	4,745	5,191	6,295	7,496	8,314	8,429	8,445
All Other Private Employment	1,318	1,280	1,436	1,592	1,886	1,990	2,001
Oil & Gas % of Total	78%	80%	81%	82%	82%	81%	81%

Source: ADOLWD, QCEW

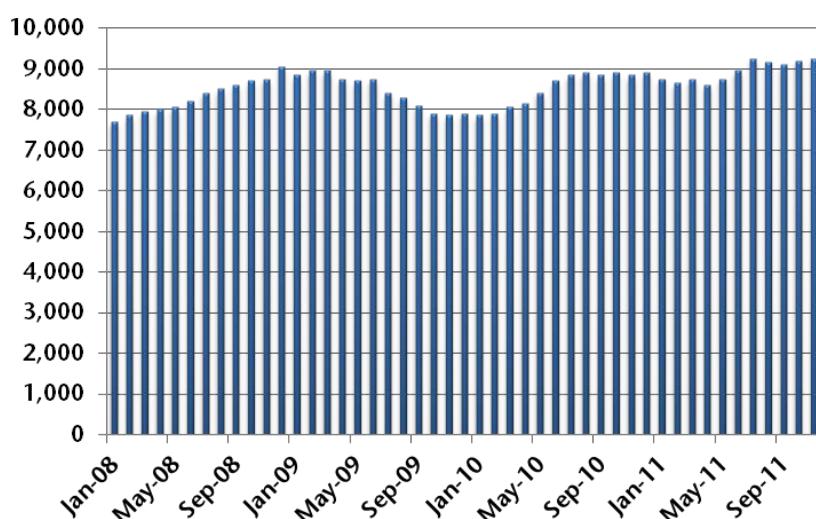
Only limited detailed employment data is available for the non-oil and gas sectors employers in Prudhoe Bay. In 2010, this employment included a monthly average 216 jobs in the Trade, Transportation and Utilities sector, 67 jobs in Professional, Scientific and Technical Services, and 1,054 jobs in the Administrative Support and Waste Management and Remediation Services (with most of the jobs in this sector related to camp support services). Another 664 jobs were reported in sectors with insufficient numbers of firms to allow data disclosure.

**Table 27: Prudhoe Bay Private Sector Employment and Payroll, By Sector, 2004-2010**

	2004	2005	2006	2007	2008	2009	2010
Oil and Gas Drilling and Extraction	1,895	1,962	2,227	2,549	2,759	2,775	2,637
Support activities for oil and gas operations	2,850	3,228	4,068	4,948	5,555	5,654	5,808
Trade, Transportation, and Utilities	138	112	117	124	127	183	216
Professional, Scientific and Tech Services	45	43	54	63	81	68	67
Admin Support, Waste Mgmt. & Remediation Serv.	594	674	750	863	1,030	1,073	1,054
All Other	540	451	515	543	648	665	664
<b>Total</b>	<b>6,063</b>	<b>6,471</b>	<b>7,731</b>	<b>9,088</b>	<b>10,200</b>	<b>10,419</b>	<b>10,446</b>

Source: ADOLWD, QCEW

**Figure 19: Monthly North Slope Oil and Gas Employment Estimates, January 2008-November 2011**



Source: ADOLWD, CES.

**Table 28: Monthly North Slope Oil and Gas Employment Estimates,  
January 2008-November 2011**

	2008	2009	2010	2011
January	7,700	8,850	7,850	8,750
February	7,850	8,950	7,900	8,650
March	7,950	8,950	8,050	8,750
April	8,000	8,750	8,150	8,600
May	8,050	8,700	8,400	8,750
June	8,200	8,750	8,700	8,950
July	8,400	8,400	8,850	9,250
August	8,500	8,300	8,900	9,150
September	8,600	8,100	8,850	9,100
October	8,700	7,900	8,900	9,200
November	8,750	7,850	8,850	9,250
December	9,050	7,900	8,900	N/A

N/A indicates not available at the time of this study's preparation..

November 2011 estimate is preliminary.

Source: ADOLWD, CES.

## Long-term North Slope Employment and Production Trends

The relationship between jobs and production on the North Slope has changed fundamentally over the past decade (and before that). In the year 2000, North Slope oil production totaled approximately 108,000 barrels for every oil and gas industry job (measured on an annual average basis) on the North Slope. In 2010, North Slope oil production totaled approximately 28,000 barrels for every oil and gas industry job on the North Slope. The peak year, in terms of barrels of oil produced per North Slope job, was in 1987, at 255,000 barrels per job.

A number of forces account for this trend, including declining oil production (38 percent in terms of average daily production since 2000). In the last decade that decrease in production has been accompanied by a substantial increase in employment. Rising employment (more than doubling – up by 140 percent since 2000) is primarily the result of new development activity (Pt. Thomson, Oooguruk, Nikaitchuq), increasingly labor-intensive and capital-intensive (on a per barrel basis) efforts to extract additional oil from mature fields, and Prudhoe Bay renewal activity.

**Table 29: North Slope Oil and Gas Industry Employment and Production, 1980-2010**

Year	Annual Ave. Employment	Production Million Barrels/Day	Jobs/Barrel /Year	Year	Annual Ave. Employment	Production Million Barrels/Day	Jobs/Barrel/ Year
1980	2,794	1.455	190,077	1996	3,605	1.468	148,632
1981	4,187	1.513	131,895	1997	3,272	1.392	155,281
1982	3,720	1.573	154,340	1998	3,890	1.266	118,789
1983	3,475	1.629	171,104	1999	2,944	1.150	142,578
1984	3,785	1.656	159,694	2000	3,475	1.033	108,502
1985	3,816	1.713	163,848	2001	4,293	0.993	84,427
1986	2,659	1.802	247,360	2002	4,456	1.010	82,731
1987	2,671	1.868	255,268	2003	4,694	0.991	77,059
1988	2,905	2.010	252,547	2004	4,809	0.974	73,926
1989	3,261	1.952	218,485	2005	5,153	0.911	64,528
1990	3,622	1.826	184,012	2006	6,285	0.840	48,783
1991	3,442	1.806	191,514	2007	7,516	0.734	35,645
1992	3,172	1.780	204,823	2008	8,323	0.716	31,400
1993	2,852	1.668	213,471	2009	8,425	0.693	30,023
1994	3,352	1.601	174,333	2010	8,445	0.644	27,834
1995	3,491	1.571	164,255				

Source: Employment data from Bureau of Economic Analysis. Oil production data from Alaska Department of Revenue.

### **Firms Reporting Prudhoe Bay Employment**

In 2010, 49 different private sector firms reported employment in the Prudhoe Bay area (several government agencies also reported employment that year). Companies reporting more than 20 employees are listed in the following table. The three largest (in terms of employment) include ASRC Energy Services, CH2M-Hill, and BP. Several individual companies appear on the list more than once. CPAI employment at its Alpine and Kuparuk operations is reported separately. Doyon Universal Services reported employment in several NAICS categories, including Facilities Support Services, Food Service Contractors, and Security Guard and Patrol Services. NANA Management Services reported employment in several sectors, including Food Service Contractors, and Security Guard and Patrol Services, Rooming and Boarding Houses, Office Administrative Services, and Commercial and Institutional Building Construction.

**Table 30: Prudhoe Bay Firms with Employment of 20 or More, 2010**

Firm	NAICS Code	Sector	2010 Employment Range
ASRC Energy Services O&M Inc.	213112	Support Services for Oil & Gas Ops	1000+
CH2M-Hill	213112	Support Services for Oil & Gas Ops	1000+
BP Exploration (Alaska) Inc.	211111	Oil and Gas Extraction	1000+
Udelhoven Oilfield System Svc	213112	Support Services for Oil & Gas Ops	500-749
Nabors AK Drilling Inc.	213111	Drilling Oil & Gas Wells	250-499
Schlumberger Technology Corp	213112	Support Services for Oil & Gas Ops	250-499
ConocoPhillips Company (Kuparuk Ops)	211111	Oil and Gas Extraction	250-499
Doyon Universal Services LLC	561210	Facilities Support Services	250-499
Doyon Drilling Inc.	213111	Drilling Oil & Gas Wells	250-499
Halliburton Company	213112	Support Services for Oil & Gas Ops	250-499
Norcon Inc.	213112	Support Services for Oil & Gas Ops	250-499
Peak Oilfield Svc Co	213112	Support Services for Oil & Gas Ops	250-499
Ice Svcs Inc.	561210	Facilities Support Services	250-499
NANA Management Services LLC	561612	Security Guard and Patrol Services	100-249
NANA Management Services LLC	722310	Food Service Contractors	100-249
Doyon Universal Services LLC	722310	Food Service Contractors	100-249
Doyon Universal Services LLC	561612	Security Guard and Patrol Services	100-249
Little Red Services Inc	213112	Support Services for Oil & Gas Ops	100-249
NANA Management Services LLC	721310	Rooming and Boarding Houses	100-249
Kakivik Asset Management LLC	213112	Support Services for Oil & Gas Ops	100-249
ConocoPhillips Company (Alpine Ops)	211111	Oil and Gas Extraction	100-249
Colville Inc.	213112	Support Services for Oil & Gas Ops	50-99
Alaska Aggregate Products LLC	811310	Commercial/Industrial Machinery & Equipment Repair & Maintenance	50-99
NANA Management Services LLC	561110	Office Administrative Services	50-99
Alaska Clean Seas	562910	Remediation Services	50-99
Doyon Universal Services LLC	722310	Food Service Contractors	50-99
Fairweather LLC	213112	Support Services for Oil & Gas Ops	50-99
NANA Management Services LLC	236220	Commercial and Institutional Building Construction	50-99
Alyeska Pipeline Svc Co Inc.	486110	Pipeline Transportation of Crude Oil	50-99
REPCON Inc.	237120	Oil and Gas Pipeline and Related Structures Construction	50-99
BJ Services Company USA	213112	Support Services for Oil & Gas Ops	20-49
Carlile Transportation Systems, Inc.	484122	General Freight Trucking	20-49
Doyon Universal Services LLC	561612	Security Guard and Patrol Services	20-49
F R Bell & Assoc Inc.	541370	Surveying and Mapping	20-49
NANA Oilfield Services Inc.	454311	Heating Oil Dealers	20-49
AK Airlines Inc.	481111	Scheduled Passenger Air Transportation	20-49
National Oilwell Varco LP	423830	Industrial Machinery and Equipment Wholesalers	20-49
Rydberg Levy Group	541612	Human Resources Consulting Services	20-49
Northern Construction & Maintenance	811211	Electronics Repair and Maintenance	20-49

# Chapter 3. Nonresidents in the Oil and Gas Industry Labor Force

---

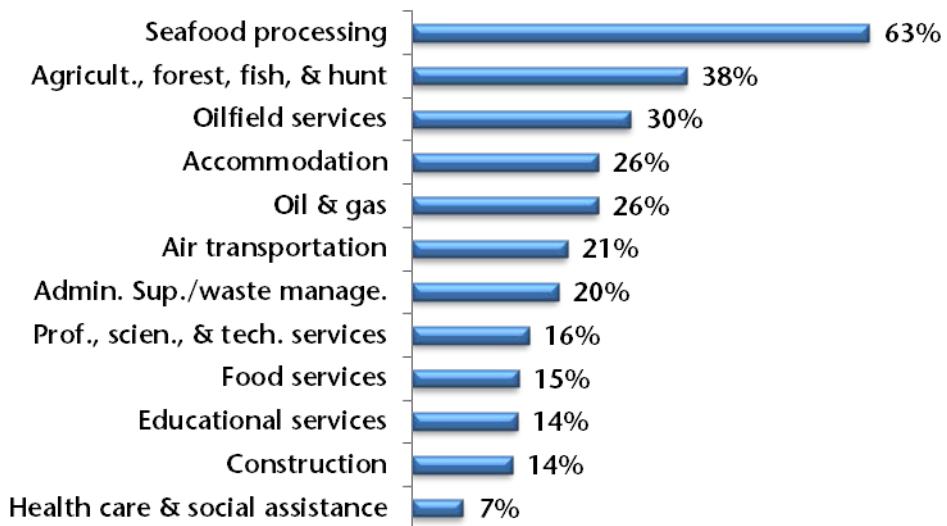
Nonresidents play an important role in meeting the labor needs of Alaska business and industry. In 2009 (the latest data available from ADOLWD), a total of 76,867 nonresidents worked in Alaska, 19.1 percent of the total private sector, state government and local government workforce. In 2009, 22.1 percent of private sector labor force was nonresident.

**Table 31: Workers and Wages by Industry, Alaska Total and Nonresident, 2009**

Industry	Total		Nonresident			
	Workers	Wages (in millions)	Workers	Percent	Wages (in millions)	Percent
Agriculture, forestry, fishing, & hunting	1,675	\$32.9	685	40.9%	\$12.4	37.7%
Mining	19,388	\$1,749.6	5,432	28.0%	\$490.1	28.0%
Oil and gas	4,045	\$620.1	920	22.7%	\$157.9	25.5%
Oilfield services	12,423	\$931.3	3,707	29.8%	\$279.4	30.0%
Utilities	2,354	\$144.1	146	6.2%	\$5.3	3.7%
Construction	27,129	\$1,107.9	5,480	20.2%	\$152.2	13.7%
Manufacturing	26,877	\$478.6	17,104	63.6%	\$195.9	40.9%
Seafood processing	21,874	\$289.5	16,325	74.6%	\$181.6	62.7%
Wholesale trade	7,502	\$302.7	798	10.6%	\$16.6	5.5%
Retail trade	47,826	\$987.7	6,625	13.9%	\$64.7	6.5%
Transportation & warehousing	24,947	\$1,081.0	6,015	24.1%	\$253.7	23.5%
Air transportation	7,505	\$304.6	1,730	23.1%	\$64.8	21.3%
Information	7,570	\$371.2	579	7.6%	\$16.2	4.4%
Finance and insurance	10,008	\$491.4	677	6.8%	\$17.6	3.6%
Real estate & rental & leasing	6,719	\$184.9	630	9.4%	\$10.2	5.5%
Professional, scientific, & technical services	16,654	\$803.5	3,013	18.1%	\$128.4	16.0%
Management of companies & enterprises	570	\$45.8	43	7.5%	\$3.9	8.5%
Admin. Support/waste management & remediation	17,689	\$487.5	4,251	24.0%	\$97.8	20.1%
Educational services	2,503	\$63.8	520	20.8%	\$9.2	14.4%
Health care & social assistance	44,030	\$1,589.4	4,451	10.1%	\$110.6	7.0%
Arts, entertainment, and recreation	6,564	\$70.6	1,802	27.5%	\$13.9	19.6%
Accommodation & food services	39,686	\$496.8	11,423	28.8%	\$90.5	18.2%
Accommodation	11,991	\$164.1	4,890	40.8%	\$41.8	25.5%
Food services & drinking places	27,695	\$332.8	6,533	23.6%	\$48.7	14.6%
Other services	12,827	\$325.9	1,713	13.4%	\$29.9	9.2%
Public administration	512	\$14.6	20	3.9%	\$0.1	0.7%
Unclassifiable	1,105	\$22.7	305	27.4%	\$4.2	18.7%
State government	27,487	\$1,171.4	1,860	6.8%	\$37.9	3.2%
Local government	50,997	\$1,607.2	3,295	6.5%	\$53.7	3.3%
<b>Total</b>	<b>402,619</b>	<b>\$13,631.1</b>	<b>76,867</b>	<b>19.1%</b>	<b>\$1,815.0</b>	<b>13.3%</b>

Source: ADOLWD.

**Figure 20: Selected Private Sector Industries Percent Nonresident Workers, 2009**



Source: ADOLWD.

This chapter examines nonresident participation in Alaska's oil and gas industry, including recent trends, Nonresident employment by key oil and gas industry related firms, nonresident participation by occupation, and other data.

With respect to this analysis of workforce residency, it is important to note there is no single, uniformly accepted definition of residency. Proof of residency for purposes of voter registration includes an Alaska driver's license, an Alaska hunting or fishing license, proof of Alaska employment, or "other documentation that supports your claim as an Alaska resident."<sup>2</sup> An Alaska resident for purposes of determining tuition rates at the University of Alaska is a person who is "a United States citizen or eligible non-citizen that has been physically present in Alaska for at least the past two years."<sup>3</sup> For purposes of applying for public assistance through the Alaska Department of Health and Social Services, "an Alaska resident is a person who: lives in Alaska voluntarily, is not in Alaska for a temporary purpose such as a vacation or a business trip; and intends to make Alaska his or her home and has no intention of shortly leaving the State to take up residence somewhere else."<sup>4</sup>

Suffice it to say the term "residency" has different definitions for different applications. The relevant definition for purposes of this study is the Alaska Permanent Fund Dividend (PFD) program definition. Because of the PFD program, Alaska is unusual among U.S. states in its interest in establishing a clear definition of residency. To be eligible for a PFD, applicants must have been an Alaska resident for the entire calendar year preceding the date they apply for a dividend (the "qualifying year") and intend to remain an Alaska resident indefinitely at the time they apply for a dividend. From the program website:

<sup>2</sup> [http://www.elections.alaska.gov/vi\\_vr\\_how.php](http://www.elections.alaska.gov/vi_vr_how.php)

<sup>3</sup> <http://www.alaska.edu/future/residency/>

<sup>4</sup> [http://dpaweb.hss.state.ak.us/manuals/apa/423/423-1\\_definition\\_of\\_alaska\\_residency.htm](http://dpaweb.hss.state.ak.us/manuals/apa/423/423-1_definition_of_alaska_residency.htm)

"The 'qualifying year' is the calendar year preceding the year an individual applies for a current year dividend. For example, for a person who is applying for a dividend in 2011, the qualifying year is 2010. Eligibility for the dividend program is determined by an individual's residency activity during the qualifying year."

Cross-tabulating individual PFD application data, maintained by the Alaska Department of Revenue, with individual unemployment insurance wage records maintained by ADOLWD, makes it possible to measure the resident and nonresident labor participation in firms reporting employment in Alaska.

The following analysis of nonresident participation is based entirely on ADOLWD data, which employs this PFD application based methodology. Specifically, in ADOLWD's methodology, a resident worker in 2010 (for example) is someone who applied for a PFD in either 2010 or in 2011. It is important to keep in mind, however, that as an absolute measure, PFD-based data provides the broadest (highest) possible definition of nonresident participation in Alaska's labor force. Actual nonresident labor participation in the Alaska economy is less than what is suggested by PFD data because of the one year to nearly two years of Alaska residency required before qualifying for the PFD.<sup>5</sup>

ADOLWD has investigated how many workers are identified as nonresident in one year in the PFD-based residency analysis, but then counted as residents the next year. In ADOLWD most recent analysis, 14.5 percent of workers classified as nonresident were counted as residents in the following year.<sup>6</sup> Nevertheless, the PFD data is very useful for comparing nonresident labor participation among industries, and measuring changes in nonresident labor participation over time.

## **Nonresident Participation in Alaska's Oil and Gas Industry Workforce**

Alaska's oil and gas extraction sector (NAICS sector 211) included a statewide total of 4,045 workers in 2009, 3,125 residents and 920 nonresidents. These numbers differ from the QCEW employment data presented elsewhere in this report because these are total counts of workers employed each year, no matter how long they worked (while QCEW data are based on monthly averages).

At 23 percent, the proportion of nonresidents in the workforce in 2009 was at its lowest point since 2003. Nonresident participation trended down in 2008 and 2009, from a highpoint of 26 percent in 2007.

---

<sup>5</sup> For example, data published by BP indicates that, based on where its mails its employee's W-2 forms each year, 18 percent of its 2010 Alaska employees resided outside the state. Based on PFD data, 25 percent of its employees were classified as nonresident in 2010.

<sup>6</sup>ADOLWD, *Nonresidents Working in Alaska, 2009*, page 2.

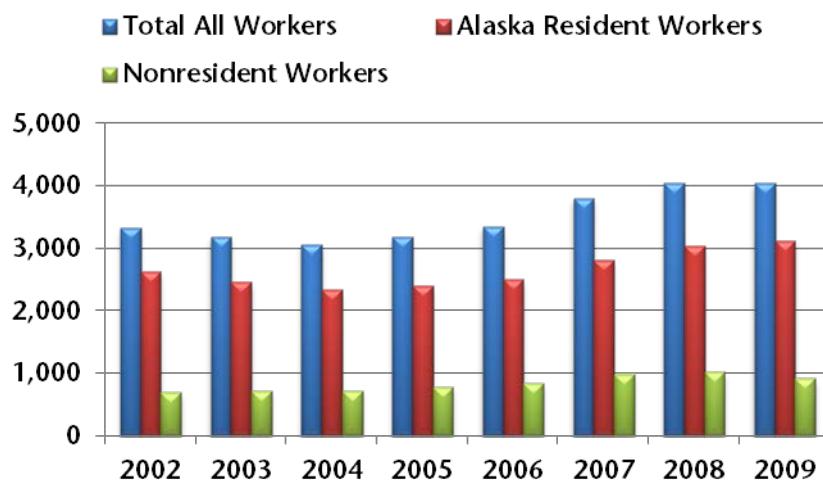
**Table 32: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers Statewide, Sector 211, 2002 – 2009**

	Total All Workers	Alaska Resident Workers	Nonresident Workers	Percent Nonresident
2002	3,331	2,635	696	21%
2003	3,186	2,464	722	23%
2004	3,072	2,342	730	24%
2005	3,183	2,399	784	25%
2006	3,354	2,502	852	25%
2007	3,809	2,822	987	26%
2008	4,055	3,036	1,019	25%
2009	4,045	3,125	920	23%

Source: ADOLWD.

From 2004 through 2009, the oil and gas extraction sector added a total of 973 workers, including 783 resident workers and 190 nonresident workers. The five-year annual rate of growth for resident workers was 5.8 percent, while the nonresident growth rate was 4.8 percent. The nonresident rate includes a 9.7 percent drop between 2008 and 2009.

**Figure 21: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers, Sector 211, 2002-2009**



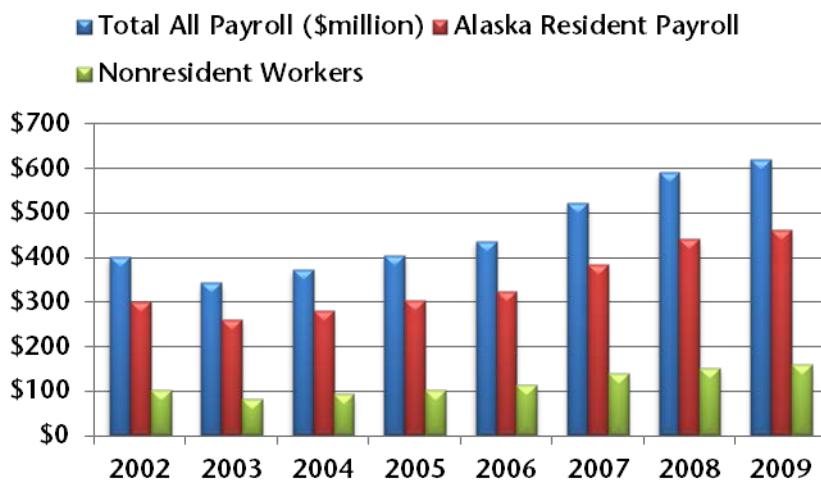
Payroll in the oil and gas extraction sector totaled \$620 million in 2009, including \$462.2 million earned by Alaska residents and \$157.9 million earned by nonresidents. Nonresidents accounted for 25 percent of total payroll in the sector in 2009. The percentage of payroll earned by nonresidents has consistently been around 25 percent.

**Table 33: Resident and Nonresident Payroll in Alaska's Oil and Gas Industry, Sector 211, 2002-2009 (\$millions)**

	Total All Payroll	Alaska Resident Payroll	Nonresident Payroll	Percent Nonresident
2002	\$401.5	\$300.7	\$100.8	25%
2003	\$341.8	\$260.7	\$81.1	24%
2004	\$372.3	\$279.7	\$92.6	25%
2005	\$404.3	\$303.9	\$100.4	25%
2006	\$436.1	\$323.9	\$112.2	26%
2007	\$521.7	\$383.9	\$137.8	26%
2008	\$591.1	\$440.0	\$151.1	26%
2009	\$620.1	\$462.2	\$157.9	25%

Source: ADOLWD.

**Figure 22: Resident and Nonresident Payroll in Alaska's Oil and Gas Industry, Sector 211, 2002-2009 (\$millions)**



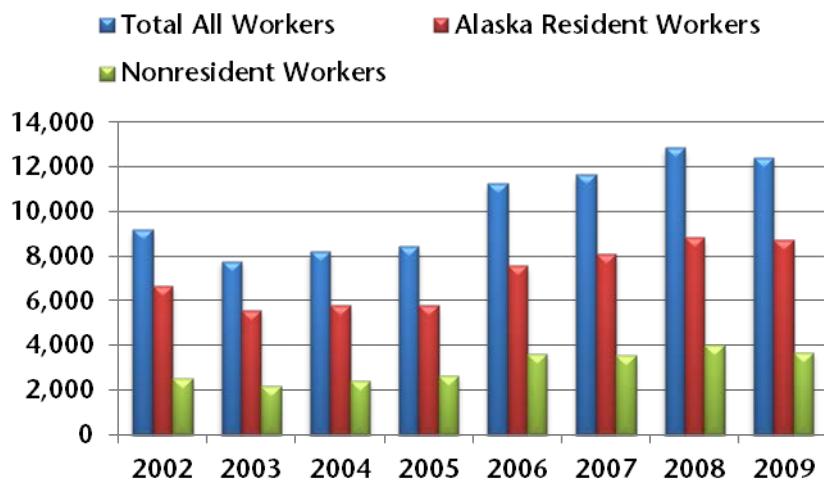
The Drilling for Oil and Gas and Support Activities for Oil and Gas Operations sectors (NAICS sectors 213111 and 213112) combined employed a statewide total of 12,423 workers in 2009, including 8,716 Alaska residents and 3,707 nonresidents. The percentage of nonresidents employed in these sectors is consistently around 30 percent. Resident and nonresident participation both increased at a rate of about 9 percent annually over the 2004 through 2009 period.

**Table 34: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers, Sectors 213111 and 213112, 2002-2009**

	Total All Workers	Alaska Resident Workers	Nonresident Workers	Percent Nonresident
2002	9,184	6,680	2,504	27%
2003	7,784	5,592	2,192	28%
2004	8,221	5,784	2,437	30%
2005	8,445	5,787	2,658	31%
2006	11,243	7,600	3,643	32%
2007	11,663	8,119	3,544	30%
2008	12,875	8,851	4,024	31%
2009	12,423	8,716	3,707	30%

Source: ADOLWD.

**Figure 23: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers, Sectors 213111 and 213112, 2002-2009**



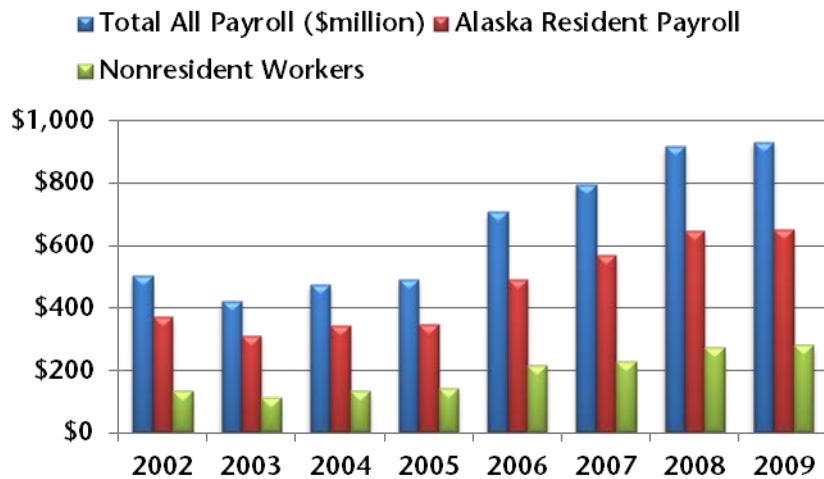
Nonresidents also accounted for 30 percent of the \$931 million in total annual payroll in these two sectors combined. Residents earned \$651.9 million in 2009 while nonresidents earned \$279.4 million. Total annual payroll increased substantially for residents (up 91 percent) and nonresidents (up over 100 percent) over the five-year period of 2004 through 2009.

**Table 35: Resident and Nonresident Participation in Oil and Gas Industry, Payroll, Sectors 213111 and 213112, 2002-2009 (\$millions)**

	Total All Payroll	Alaska Resident Payroll	Nonresident Payroll	Percent Nonresident
2002	\$501.6	\$368.7	\$132.9	26%
2003	\$421.1	\$310.8	\$110.3	26%
2004	\$475.2	\$341.2	\$134.0	28%
2005	\$489.8	\$347.3	\$142.5	29%
2006	\$705.5	\$490.1	\$215.4	31%
2007	\$795.7	\$568.8	\$226.9	29%
2008	\$915.5	\$645.0	\$270.5	30%
2009	\$931.3	\$651.9	\$279.4	30%

Source: ADOLWD.

**Figure 24: Resident and Nonresident Payroll in Alaska's Oil and Gas Industry, Sectors 213111 and 213112, 2002-2009 (\$millions)**



In all three sectors combined (211, 213111, and 213112) in 2009, the workforce included 11,841 Alaska residents and 4,627 nonresidents. Nonresidents accounted for 28 percent of all workers in 2009.

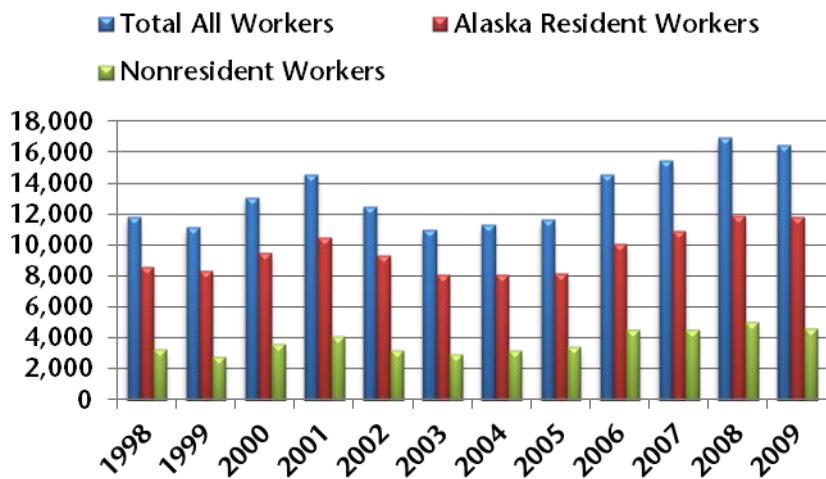
A longer-term analysis of oil and gas industry employment in Alaska also illustrates a relatively consistent nonresident role in the workforce, ranging from a low of 25 percent in 1999 to a high of 31 percent in 2006. Nonresident participation typically peaks following periods of rapid employment growth overall.

**Table 36: Resident and Nonresident Participation in Oil and Gas Industry, Numbers of Workers, Sectors 211, 213111 and 213112 Combined, 1998-2009**

	Total All Workers	Alaska Resident Workers	Nonresident Workers	Percent Nonresident
1998	11,800	8,552	3,248	28%
1999	11,123	8,380	2,743	25%
2000	13,100	9,496	3,604	28%
2001	14,548	10,480	4,068	28%
2002	12,515	9,315	3,200	26%
2003	10,970	8,056	2,914	27%
2004	11,293	8,126	3,167	28%
2005	11,628	8,186	3,442	30%
2006	14,597	10,102	4,495	31%
2007	15,472	10,941	4,531	29%
2008	16,930	11,887	5,043	30%
2009	16,468	11,841	4,627	28%

Source: ADOLWD.

**Figure 25: Resident and Nonresident Participation in Alaska's Oil and Gas Industry, Numbers of Workers, Sectors 211, 213111 and 213112 Combined, 1998-2009**



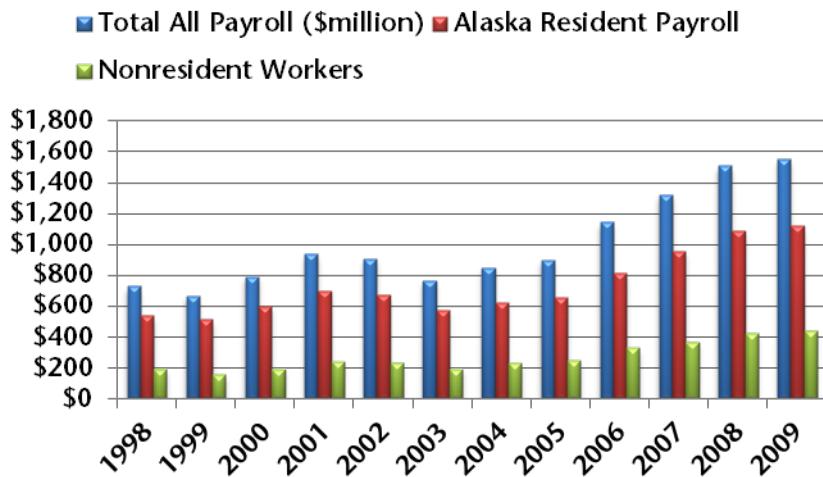
Oil and gas industry workers (in all three sectors) earned \$1.55 billion in payroll in 2009, including \$1.11 billion earned by Alaska residents and \$437 million earned by nonresident. Nonresidents earned 28 percent of all oil and gas industry payroll in 2009.

**Table 37: Resident and Nonresident Participation in Oil and Gas Industry, Payroll, Sectors 211, 213111 and 213112, 1998-2009 (\$millions)**

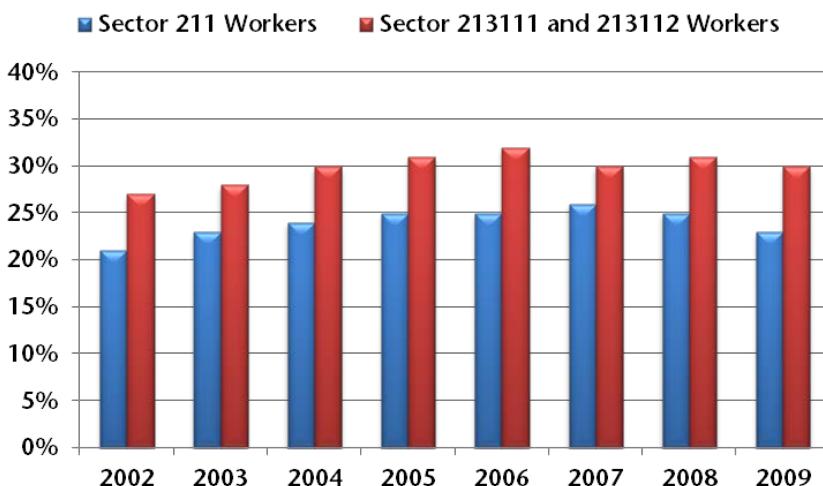
	Total All Payroll	Alaska Resident Payroll	Nonresident Payroll	Percent Nonresident
1998	\$727.0	\$535.0	\$192.0	26%
1999	\$662.0	\$509.0	\$153.0	23%
2000	\$787.5	\$598.5	\$189.0	24%
2001	\$937.0	\$698.0	\$239.0	26%
2002	\$903.1	\$669.4	\$233.7	26%
2003	\$762.9	\$571.5	\$191.4	25%
2004	\$847.5	\$620.9	\$226.6	27%
2005	\$894.1	\$651.2	\$242.9	27%
2006	\$1,141.6	\$814.0	\$327.6	29%
2007	\$1,317.4	\$952.7	\$364.7	28%
2008	\$1,506.6	\$1,085.0	\$421.6	28%
2009	\$1,551.4	\$1,114.1	\$437.3	28%

Source: ADOLWD.

**Figure 26: Resident and Nonresident Payroll in Alaska's Oil and Gas Industry, Sectors 211, 213111 and 213112, 1998-2009 (\$millions)**



**Figure 27: Percentage Nonresident Worker Participation in Oil and Gas Industry, Sectors 211, 213111 and 213112, 2002-2009**



In 2009, 35 percent of the North Slope oil and gas industry workforce was nonresident, virtually the same as in 2007 and 2008, and slightly below the 2006 level of 37 percent. Not surprisingly, in the statewide oil and gas industry workforce the nonresident proportion is lower; 28 percent in 2009. The statewide numbers include Anchorage, where a large number of oil and gas industry workers live and work.

Nonresidents also earned approximately 35 percent of North Slope oil industry payroll in 2009. Statewide, nonresidents accounted for 28 percent of payroll.

**Table 38: North Slope Borough and Statewide Oil Industry Resident and Nonresident Employment and Wages, 2006-2009**

	North Slope Workers	North Slope Wages (millions)	Statewide Workers	Statewide Wages (millions)
<b>2006</b>				
Resident	5,158	\$378.6	10,101	\$814.0
Nonresident	3,026	\$209.4	4,490	\$327.6
% Nonresident	37.0%	35.6%	30.8%	28.7%
<b>2007</b>				
Resident	6,144	\$492.8	10,941	\$952.7
Nonresident	3,364	\$254.5	4,531	\$364.7
% Nonresident	35.4%	34.1%	29.3%	27.7%
<b>2008</b>				
Resident	6,713	\$568.7	11,887	\$1,085.0
Nonresident	3,698	\$300.2	5,043	\$421.6
% Nonresident	35.5%	34.5%	29.8%	28.0%
<b>2009</b>				
Resident	5,770	\$444.4	11,841	\$1,114.1
Nonresident	3,106	\$244.5	4,627	\$437.3
% Nonresident	35.0%	35.5%	28.1%	28.2%

Source: ADOLWD, 2011.

### **Residency Characteristics of Individual Prudhoe Bay Zone Employers, 2005-2009**

Nonresident participation rates vary widely among the firms which employs workers on the North Slope. The data in the following table provides nonresident participation rates for firms that reported workers on the North Slope. The 2009 employment range data are each firm's reported North Slope employment. The nonresident (NR) percentages are each firm's *statewide* nonresident participation rates. Some firms on the list have no employment in Alaska other than North Slope employment. Other firms, especially the larger companies, have employment in Anchorage and perhaps elsewhere in Alaska (Alyeska, BP, CPAI, NMS (NANA Management Services), Inc., Doyon Universal Services, and others). For these firms, statewide nonresident participation rates probably overstate their North Slope nonresident participation rates (because North Slope jobs are multi-week shift jobs).

Among the firms reporting 20 or more workers on the North Slope in 2009, Repcon, Inc. (100 percent nonresident), The Rydberg Levy Group Inc. (97 percent), and SRI Technologies Inc. (90 percent) had the highest nonresident participation rates in 2009. All three firms reported North Slope employment in 2010 (though SRI Technologies Inc employment declined to the 10-19 employee range, and Repcon, Inc. to the 20-49 range).

Some of the larger companies showed steadily increasing nonresident participation over the 2005 through 2009 period. For example, Halliburton's workforce increased from about 25 percent nonresident in 2005 to 36 percent nonresident in 2009. Similarly, the Udelhoven Oilfield System Service workforce increased from 24 percent to 33 percent nonresident over the same period. Other firms show nonresident participation

declining. For example, Ice Services' nonresident worker participation declined from 40 percent in 2005 to 30 percent in 2009.

**Table 39: Nonresident Participation Trends by Firm, 2005-2009**

Firm	2009 Employment Range	2005 NR %	2006 NR %	2007 NR %	2008 NR %	2009 NR %
Alaska Clean Seas	50-99	23.5%	23.7%	24.3%	26.2%	24.1%
Alyeska Pipeline Service Company Inc.	50-99	6.9	6.6	7.6	8.4	7.9
ASRC Energy Services O&M Inc.	1000+	29.0	27.6	24.2	24.1	25.8
BJ Services Company USA	50-99	11.8	11.1	20.6	21.1	7.0
BP Exploration Alaska Inc.	1000+	28.9	29.5	29.8	27.7	26.3
Carlile Transportation Systems, Inc.	20-49	10.9	15.6	14.1	13.5	12.7
VECO/CH2MHill	1000+	30.2	33.1	33.1	35.5	32.5
Colville, Inc.	100-249	19.6	19.7	21.7	24.1	23.6
ConocoPhillips Company	500-749	18.2	18.6	19.3	20.7	18.4
Crowley Marine Services Inc.	20-49	28.7	27.8	35.4	37.4	39.2
Deadhorse Maintenance and OP LLC	20-49	45.2	42.5	29.3	28.8	30.6
Doyon Drilling Inc.	250-499	25.2	28.2	24.5	21.3	21.4
Doyon Universal Services, LLC	500-749	8.7	10.1	10.0	11.2	9.3
F R Bell & Associates Inc.	20-49	30.1	20.0	27.7	28.4	25.3
Halliburton Company	250-499	24.7	30.1	32.8	32.3	36.0
Ice Services Inc.	250-499	39.7	30.9	26.9	28.1	29.9
Kakivik Asset Management LLC	100-249	33.2	33.3	28.9	31.6	31.9
Little Red Services Inc.	100-249	36.7	35.2	34.9	35.0	37.0
Nabors AK Drilling Inc.	500-749	30.5	32.9	32.9	32.7	32.9
NANA Management Services Inc.	500-749	12.7	12.7	10.8	11.2	10.9
Norcon Inc.	250-499	24.8	24.1	22.9	23.2	20.1
Peak Oilfield Service Company	250-499	22.5	29.6	25.6	26.8	25.9
Repcon Inc.	50-99	-	-	-	100.0	100.0
Schlumberger Technology Corp.	250-499	33.7	33.0	29.1	30.5	32.5
SRI Technologies Inc.	20-49	100.0	95.5	97.1	96.9	90.2
The Rydberg Levy Group Inc.	20-49	-	100.0	100.0	97.8	96.7
Udelhoven Oilfield System Service	500-749	23.6	31.2	27.0	30.5	33.1

Note: Nonresident participation rates are firms' statewide rates, not just for North Slope workers.

Source: ADOLWD and McDowell Group estimates. Employment ranges for companies with multiple North Slope locations are McDowell Group estimates.

A number of oil and gas industry firms with North Slope interests report all of their employment as being located in Anchorage. The nonresident share of employment for these firms is provided in the following table (the list is limited to firms reporting 20 or more workers in 2009).

**Table 40: Nonresident Participation Trends for Oil and Gas Industry Firms Not Reporting North Slope Employment, 2005-2009**

Firm	2009 Employment Range	2005 NR %	2006 NR %	2007 NR %	2008 NR %	2009 NR %
Baker Hughes Oilfield Operations	100-249	51.8%	52.9%	53.6%	54.1%	54.8%
Cooper Cameron Corporation	20-49	n/a	4.8	n/a	12.0	12.5
Expro Americas LP	20-49	n/a	n/a	25.0	21.9	12.9
Exxon Mobil Corporation	20-49	7.7	16.0	18.5	40.0	34.4
Fairweather E&P Services Inc	100-249	43.9	41.4	36.9	33.8	11.6
FMC Technologies Inc	20-49	n/a	n/a	5.0	n/a	0
GBR Equipment Inc	20-49	34.9	42.2	43.6	44.6	48.4
Kuukpik Drilling LLC	20-49	11.3	10.2	17.3	12.2	13.0
M-I LLC	100-249	24.9	21.1	18.6	17.3	18.8
Nordic-Calista Services No 1	50-99	16.0	21.3	27.3	24.1	21.3
Pioneer Natural Resources USA Inc	20-49	17.2	0	12.2	12.8	14.5
Shell Exploration & Production	20-49	n/a	n/a	32.3	28.9	25.0
Stallion Rockies Ltd	20-49	n/a	n/a	n/a	34.8	42.3

Note: Nonresident participation rates are firms' statewide rates, not just for North Slope workers.

Source: ADOLWD.

## North Slope Worker Movement

In an effort to gauge worker movement into, out of, and within the North Slope oil industry, at the request of McDowell Group, ADOLWD conducted a cohort analysis where workers were statistically tracked over a six-year period. More specifically, 6,755 resident and nonresident workers identified as employees of North Slope firms in 2006 were tracked back to 2004 and forward to 2009 to measure overall changes in employment status.

Among the 6,755 workers identified in 2006, 4,430 (66 percent) were Alaska residents and 2,325 (34 percent) were nonresidents. Among residents, 2,228 (50 percent) had been with the same employer in 2004 as in 2006, though some were in different occupations, at a different place of work, or both. Among nonresidents, 945 workers (40 percent) had been with the same employer in 2004, though some were in different occupations, at a different place of work, or both.

Going forward, among residents in the 2006 cohort, 2,722 workers (61 percent of the 2006 resident cohort) were with the same employer in 2009, though again some were in different occupations, at a different place of work, or both. Among nonresidents, 1,274 workers (55 percent of the 2006 nonresident cohort) were with the same employer in 2009, though again some were in different occupations, at a different place of work, or both.

In terms of tenure on the North Slope, among residents in the 2006 cohort, 2,311 workers (52 percent) had been employed on the North Slope in 2004, either with the same employer or a different employer and in some cases in a different occupation. This compares to 999 nonresident workers, or 43 percent of the 2006

nonresident cohort. Going forward, among residents in the 2006 cohort, 2,973 workers (67 percent) were still employed on the North Slope, either with the same employer or a different employer in 2009. Among nonresidents in the 2006 cohort, 1,404 workers (60 percent) were still employed on the North Slope in 2009, either with the same employer or a different employer.

This analysis, and other data contained in the following table, provides an indication of turnover in the North Slope work force, with (apparently) slightly higher turnover among nonresident workers than among resident workers. Overall, among the 6,755 workers in the 2006 North Slope worker cohort, 21 percent were with a different employer the next year, in 2007. This includes 20 percent of resident workers in the 2006 cohort and 23 percent of the nonresident in the 2006 cohort.

In the absence of similarly detailed data for other industries in Alaska, it is not possible to draw any firm conclusions regarding turnover and its implications on recruiting for North Slope positions. The one-in-five turnover rate suggested in this analysis is likely not substantially different than national averages. According to Bureau of Labor Statistics (BLS) data, nationally the annual turnover rate in the Mining and Natural Resources sector was 30 percent in 2010.<sup>7</sup> The national private sector annual average separation rate is about 40 percent. However, the national BLS data is not directly comparable to the North Slope data presented in this study, as BLS worker separation rates include seasonal layoffs, even if workers are expected to return the next season.

---

<sup>7</sup> <http://data.bls.gov/cgi-bin/surveymost>

**Table 41: Worker Movement, Prudhoe Bay Zone Employers  
Using 2006 Worker Cohort, 2004-2009**

	2004	2005	2006	2007	2008	2009
<b>Total Workers in 2006 Cohort</b>	<b>6,755</b>	<b>6,755</b>	<b>6,755</b>	<b>6,755</b>	<b>6,755</b>	<b>6,755</b>
Total, no change	2,112	3,003	6,755	4,154	3,117	2,652
Resident	1,482	2,055	4,430	2,764	2,123	1,773
Nonresident	630	948	2,325	1,390	994	879
% resident	70.2%	68.4%	65.6%	66.5%	68.1%	66.9%
%nonresident	29.8%	31.6%	34.4%	33.5%	31.9%	33.1%
<b>Total change in some way</b>	<b>4,643</b>	<b>3,752</b>		<b>2,601</b>	<b>3,638</b>	<b>4,103</b>
Same employer, diff. occupation	708	705		932	1,111	1,134
Same employer, diff. place of work	185	151		97	118	124
Same employer, diff. occupation & place of work	168	228		152	77	86
Diff. employer, same occupation & place of work	83	56		70	99	105
Diff. employer, diff. occupation	407	323		255	456	486
Diff. employer, diff. place of work	161	144		92	118	105
Diff. employer, diff. occupation & place of work	2,931	2,145		1,003	1,659	2,063
<b>Total changed in some way (2006 residents)</b>	<b>2,993</b>	<b>2,395</b>		<b>1,726</b>	<b>2,353</b>	<b>2,666</b>
Same employer, diff. occupation	479	466		650	757	782
Same employer, diff. place of work	133	89		74	91	99
Same employer, diff. occupation & place of work	134	172		114	62	68
Diff. employer, same occupation & place of work	61	38		52	69	75
Diff. employer, diff. occupation	289	235		192	323	343
Diff. employer, diff. place of work	135	124		71	99	87
Diff. employer, diff. occupation & place of work	1,762	1,271		573	952	1,212
<b>Total changed in some way (2006 nonresidents)</b>	<b>1,650</b>	<b>1,357</b>		<b>875</b>	<b>1,285</b>	<b>1,437</b>
Same employer, diff. occupation	229	239		282	354	352
Same employer, diff. place of work	52	62		23	27	25
Same employer, diff. occupation & place of work	34	56		38	15	18
Diff. employer, same occupation & place of work	22	18		18	30	30
Diff. employer, diff. occupation	118	88		63	133	143
Diff. employer, diff. place of work	26	20		21	19	18
Diff. employer, diff. occupation & place of work	1,169	874		430	707	851
<b>Total Same Employer (2006 Residents)</b>	<b>2,228</b>	<b>2,782</b>	<b>4,430</b>	<b>3,602</b>	<b>3,033</b>	<b>2,722</b>
<b>Total Same Location (North Slope) (2006 residents)</b>	<b>2,311</b>	<b>2,794</b>	<b>4,430</b>	<b>3,658</b>	<b>3,272</b>	<b>2,973</b>
<b>Total Same Employer (2006 Nonresidents)</b>	<b>945</b>	<b>1,305</b>	<b>2,325</b>	<b>1,733</b>	<b>1,390</b>	<b>1,274</b>
<b>Total Same Location (North Slope) (2006 Nonresidents)</b>	<b>999</b>	<b>1,293</b>	<b>2,325</b>	<b>1,753</b>	<b>1,511</b>	<b>1,404</b>

Source: ADOLWD.

## **Oil and Gas Industry Alaska Resident Workers' Place of Residence**

It is interesting to note Alaska resident oil and gas industry workers reside in communities throughout Alaska. The following table lists over 40 Alaska communities where five or more oil and gas industry workers reside. Anchorage is home to the largest segment of oil and gas industry workers, with over 4,000 as of the 3<sup>rd</sup> quarter of 2009.

**Table 42: Workers and Wages by Place of Residence for Oil & Gas Industry Workers,  
NAICS 211, 213111, and 213112, 3<sup>rd</sup> Quarter 2009**

Location	Quarterly Total Wages	Workers	Location	Quarterly Total Wages	Workers
Anchorage	\$103,735,773	4,055	College	\$354,941	16
Wasilla	\$32,795,391	1,531	Glennallen	\$343,619	14
Soldotna	\$19,532,297	901	Trapper Creek	\$294,762	12
Kenai	\$17,884,156	870	Copper Center	\$226,353	11
Fairbanks	\$12,107,190	597	Nuiqsut	\$162,177	11
Palmer	\$10,920,003	506	Tok	\$196,320	11
Eagle River	\$13,713,520	489	Clam Gulch	\$187,434	10
Sterling	\$5,317,651	234	Juneau	\$228,331	10
Nikiski	\$4,700,142	233	Point Hope	\$78,289	10
Chugiak	\$4,290,507	180	Cordova	\$157,483	8
Homer	\$2,705,919	135	Nenana	\$186,502	8
Kasilof	\$2,490,660	118	Copper Landing	\$186,054	7
Valdez	\$1,834,937	97	Ketchikan	\$168,909	7
Big Lake	\$2,108,234	94	Prudhoe Bay	\$161,120	7
Willow	\$1,664,612	78	Salcha	\$174,641	7
Anchor Point	\$1,238,751	67	Seldovia	\$99,715	7
Delta Junction	\$1,568,508	65	Alexander Creek/Beluga	\$46,695	6
Houston	\$880,417	46	Newhalen	\$59,112	6
Girdwood	\$1,037,514	44	Moose Pass	\$105,384	5
Ninilchik	\$872,184	43	Nulato	\$44,905	5
Talkeetna	\$858,496	40	Sand Point	\$65,960	5
Sutton	\$745,340	38	Sitka	\$118,359	5
Seward	\$691,240	36	Tanana	\$97,200	5
Barrow	\$289,209	32	Other	\$2,364,808	132
Kodiak	\$250,343	17			
			Total Residents	\$250,342,066	10,871
			Total Nonresident/not reported	\$99,816,636	3,831
			Total All Workers	\$350,158,702	14,702

Note: Places shown have 5 or more resident workers in the oil industry.

Source: ADOLWD.

## Oil and Gas Industry Workforce New-Hire Residency

An examination of ADOLWD “new-hire” data provides additional insight into the oil and gas industry workforce in Alaska and on the North Slope. A new-hire is a worker who did not work for their new employer in any of the previous four quarters. It is important to note that new-hire data include turnover replacements and new jobs and therefore does not provide a measure of overall employment growth.

New-hire data are drawn from the quarterly Alaska Unemployment Wage (UI Wage) records. These records are matched with Alaska's Occupational Database (ODB), which contains occupation and place of work information for each worker.

New-hire residency data for all primary sectors of wage and salary employment were published in an April 2011 ADOLWD *Alaska Economic Trends* article. Data from that article are tabulated below. Notable findings in that data include the relatively high level of nonresident new-hires during the third quarter of 2010; 38.2 percent average for all sectors, ranging from 8.2 percent Nonresident in Public Administration to 82.2 percent nonresident in Manufacturing (mainly seafood processing). Oil and gas industry new-hires are reported at 52.3 percent nonresident. A relatively higher nonresident participate rate would reasonably be expected in third quarter new-hire data given that seasonal industries, such as seafood processing and tourism, are heavily reliant on nonresident labor. In fact, most sectors have a seasonal component, with more activity during the summer months than other times of the year. Construction, retail, transportation, professional services, and the federal government all have summer season temporary employment peaks when nonresidents are likely to be a bigger share of the new-hire mix.

It is also important to note the Mining sector overall (which includes metal and coal mining in addition to the oil and gas industry) and the oil and gas sector specifically had – by far – the greatest increase in new-hires between 2009 and 2010. In fact the number of new-hires in third quarter 2010 was more than double the number of new-hires in third quarter 2009. It is during periods of rapid employment growth when employers report facing the greatest challenges filling jobs with Alaskans. Between January 2010 and August 2010, the oil and gas industry added 1,400 jobs, a 12 percent increase in just eight months. Given Alaska's relatively limited labor capacity, especially labor with the specialized skills often required in the oil and gas industry, it is reasonable to expect a rapid run-up in employment would go hand-in-hand with a spike in nonresident hiring.

**Table 43: Alaska New-Hires by Industry, 3<sup>rd</sup> Quarter 2009 and 3<sup>rd</sup> Quarter 2010**

Industry	3 <sup>rd</sup> quarter 2009	3 <sup>rd</sup> quarter 2010	% Nonresidents	Year-over-year change
Local government	6,165	5,744	23.0%	-6.8%
State government	1,778	1,746	28.4%	-1.8%
Agriculture, forestry, fishing, and hunting	432	605	64.5%	40.0%
Mining (including oil and gas)	947	2,015	51.0%	112.8%
<b>Oil and gas</b>	<b>636</b>	<b>1,420</b>	<b>52.3%</b>	<b>123.3%</b>
Utilities	233	171	24.0%	-26.6%
Construction	6,594	6,560	27.5%	-0.5%
Manufacturing	6,521	6,942	82.2%	6.5%
Wholesale trade	972	978	30.6%	0.6%
Retail trade	4,233	4,084	31.4%	-3.5%
Transportation and warehousing	2,355	2,446	39.2%	3.9%
Information	590	612	25.7%	3.7%
Finance and insurance	757	902	24.3%	19.2%
Real estate, rental, and leasing	1,538	1,475	19.3%	-4.1%
Professional, scientific, and technical services	1,999	2,524	34.5%	26.3%
Management of companies and enterprises	82	74	20.3%	-9.8%
Administrative support/waste management and remediation	3,778	3,820	33.1%	1.1%
Educational services	455	579	33.2%	27.3%
Health care and social assistance	5,081	5,454	27.1%	7.3%
Arts, entertainment, and recreation	1,515	1,678	31.8%	10.8%
Accommodations and food services	10,038	10,209	40.5%	1.7%
Other services	2,109	2,203	25.6%	4.5%
Public Administration	123	61	8.2%	-50.4%
<b>Total</b>	<b>58,931</b>	<b>62,302</b>	<b>38.2%</b>	<b>5.7%</b>

Source: ADOLWD.

The oil and gas industry nonresident new-hire rate of 52.3 percent during the third quarter of 2010 is interesting in its contrast to the other published ADOLWD data which indicated that 28 percent of the 2009 oil and gas industry labor force was nonresident. In an effort to determine if third quarter 2010 marked a trend toward increasing nonresident participation, ADOLWD was asked by McDowell Group to conduct similar quarterly resident/nonresident new-hire analysis for the previous six years statewide and for the North Slope. The results of that analysis are presented in the following graph and table. The reader will note a small difference in the statewide third quarter 2010 resident new-hire rate between the April 2010 *Trends* data and the ADOLWD special analysis conducted for purposes of this study. In the table below, the statewide nonresident new-hire rate is 51 percent, slightly less than the 52.3 percent reported in the *Trends* article. The difference is attributable to minor refinement of ADOLWD's methodology.

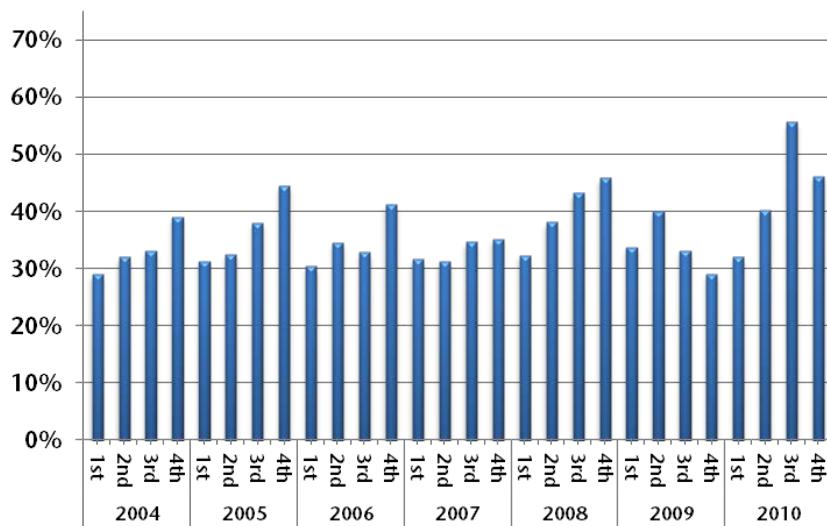
The data indicates the third quarter oil and gas industry nonresident new-hire rate was higher than in previous years, from both a statewide perspective and North Slope alone. Statewide, the 51 percent nonresident new-hire rate was the highest in any quarter in the 2004 to 2010 period. The second highest nonresident rates were in the fourth quarters of 2007 and 2007, at 40 percent.

For the North Slope in particular, nonresident new-hires in the oil and gas industry accounted for 56 percent of all new-hires during the third quarter of 2010, also the highest nonresident new-hire rate in any quarter in the 2004 to 2010 period. The second highest nonresident rates were in the fourth quarters of 2008 and 2010, at 46 percent.

In terms of annual figures, statewide nonresident new-hires have accounted for between 30 percent (2007) and 39 percent (2010) of all new-hires annually over the 2004 through 2010 period. On the North Slope, nonresident new-hire rates ranged between 32 percent (2004) and 44 percent (2010).

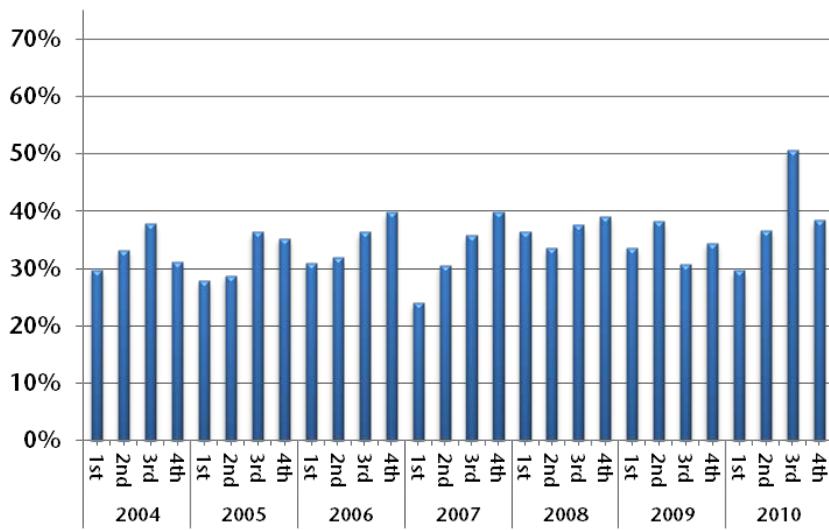
In considering the implications of this data, it is useful to examine the number of new-hires as well as the residency of new-hires. Other data has shown during periods of rapid increases in employment in the oil and gas industry, the nonresident share of the labor force increases temporarily, but eventually returns to its long-term average. In the third quarter of 2010, there were a total of 891 North Slope oil and gas industry new-hires, including 394 residents (44 percent) and 497 nonresidents (56 percent). At this volume of new-hires, a single new contractor or oil field services firm, engaged on a temporary project of a specialized nature, employing mostly nonresidents, could substantially shift the resident/nonresident new-hire mix for the quarter that the new contractor begins work. In any case, until 2011 new-hire data is available it will not be possible to determine whether the third quarter oil and gas industry nonresident new-hire data is an anomaly or the beginning of a trend toward more nonresident participation in the North Slope workforce.

**Figure 28: North Slope Oil and Gas Industry New-Hires by Residency, Percent Nonresident Hires, by Quarter, 2004-2010**



Source: ADOLWD.

**Figure 29: Statewide Oil and Gas Industry New-Hires by Residency,  
Percent Nonresident Hires, by Quarter, 2004-2010**



Source: ADOLWD.

**Table 44: North Slope Oil and Gas Industry New-Hires by Residency, by Quarter, 2004-2010**

	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter	Total
<b>2004</b>					
New Hires	443	639	499	266	1,847
Resident New Hires	314	434	334	162	1,244
% Resident New Hires	71%	68%	67%	61%	68%
% Nonresident New Hires	29%	32%	33%	39%	32%
<b>2005</b>					
New Hires	427	472	538	482	1,919
Resident New Hires	293	318	333	267	1,211
% Resident New Hires	69%	67%	62%	55%	63%
% Nonresident New Hires	31%	33%	38%	45%	37%
<b>2006</b>					
New Hires	983	2,265	1,025	598	4,871
Resident New Hires	683	1,478	688	351	3,200
% Resident New Hires	70%	65%	67%	59%	66%
% Nonresident New Hires	30%	35%	33%	41%	34%
<b>2007</b>					
New Hires	1,090	974	728	575	3,367
Resident New Hires	745	669	475	372	2,261
% Resident New Hires	68%	69%	65%	65%	67%
% Nonresident New Hires	32%	31%	35%	35%	33%
<b>2008</b>					
New Hires	788	811	924	654	3,177
Resident New Hires	533	501	524	353	1,911
% Resident New Hires	68%	62%	57%	54%	60%
% Nonresident New Hires	32%	38%	43%	46%	40%
<b>2009</b>					
New Hires	766	473	247	353	1,839
Resident New Hires	507	283	165	250	1,205
% Resident New Hires	66%	60%	67%	71%	66%
% Nonresident New Hires	34%	40%	33%	29%	34%
<b>2010</b>					
New Hires	680	1,000	891	447	3,018
Resident New Hires	461	597	394	240	1,692
% Resident New Hires	68%	60%	44%	54%	56%
% Nonresident New Hires	32%	40%	56%	46%	44%

Source: ADOLWD.

**Table 45: Statewide New-Hires by Residency in the Oil and Gas Industry, by Quarter, 2004-2010**

	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter	Total
<b>2004</b>					
New Hires	835	1,114	817	676	3,442
Resident New Hires	586	743	508	466	2,303
% Resident New Hires	70%	67%	62%	69%	67%
% Nonresident New Hires	30%	33%	38%	31%	33%
<b>2005</b>					
New Hires	889	1,061	1,138	1,078	4,166
Resident New Hires	641	755	724	697	2,817
% Resident New Hires	72%	71%	64%	65%	68%
% Nonresident New Hires	28%	29%	36%	35%	32%
<b>2006</b>					
New Hires	1,149	1,750	1,556	1,041	5,496
Resident New Hires	794	1,192	990	626	3,602
% Resident New Hires	69%	68%	64%	60%	66%
% Nonresident New Hires	31%	32%	36%	40%	34%
<b>2007</b>					
New Hires	1,794	1,463	1,382	1,003	5,642
Resident New Hires	1,364	1,016	887	657	3,924
% Resident New Hires	76%	69%	64%	60%	70%
% Nonresident New Hires	24%	31%	36%	40%	30%
<b>2008</b>					
New Hires	1,324	1,523	1,677	1,226	5,750
Resident New Hires	842	1,012	1,047	747	3,648
% Resident New Hires	64%	66%	62%	61%	63%
% Nonresident New Hires	36%	34%	38%	39%	37%
<b>2009</b>					
New Hires	1,165	879	636	608	3,288
Resident New Hires	772	543	441	398	2,154
% Resident New Hires	66%	62%	69%	66%	66%
% Nonresident New Hires	34%	38%	31%	34%	34%
<b>2010</b>					
New Hires	1,027	1,837	1,426	926	5,216
Resident New Hires	722	1,163	703	570	3,158
% Resident New Hires	70%	63%	49%	62%	61%
% Nonresident New Hires	30%	37%	51%	38%	39%

Source: ADOLWD.

## Unemployment Insurance Claimants' Residency Characteristics

Unemployment insurance claims can be tracked by place of residence and by industry. A sharp jump in oil and gas industry claimants in 2009 is evident in the data. There were a total of 2,708 claimants in 2009, nearly double the number of claimants in 2008 (1,362). A similar increase would have been expected for much of the economy as the nation entered a severe recession in late 2008 and early 2009, a recession that adversely affected nearly every sector of the economy. Nonresidents were a proportionately larger component of the unemployment insurance claimant population in 2009 than in 2008, at 20 percent and 13 percent respectively. The relatively high number of claimants persisted into 2010, at 2,540, and the nonresident share remained at 20 percent.

**Table 46: Resident and Nonresident Worker Unemployment Claimants  
in Alaska's Oil and Gas Industry, 2004-2010**

NAICS		2004	2005	2006	2007	2008	2009	2010
All	All Oil & Gas Sectors							
	Total All O&G Claimants	1,589	1,195	904	1,083	1,362	2,708	2,540
	Resident claimants total	1,329	1,000	777	900	1,183	2,169	2,022
	Nonresident claimants total	260	195	127	183	179	539	518
	% Nonresident	16%	16%	14%	17%	13%	20%	20%
211	Oil and Gas Extraction							
	Total 211 Claimants	77	38	27	17	12	63	71
	Resident claimants total	65	30	24	15	10	57	60
	Nonresident claimants total	12	8	3	2	2	6	11
	% Nonresident	16%	21%	11%	12%	17%	10%	15%
213111	Drilling for O&G							
	Total 213111 Claimants	201	154	121	153	188	413	332
	Resident claimants total	169	141	106	130	167	324	252
	Nonresident claimants total	32	13	15	23	21	89	80
	% Nonresident	16%	8%	12%	15%	11%	22%	24%
213112	Support Activities							
	Total 213112 Claimants	1,311	1,003	756	913	1,162	2,232	2,137
	Resident claimants total	1,095	829	647	755	1,006	1,788	1,710
	Nonresident claimants total	216	174	109	158	156	444	427
	% Nonresident	16%	17%	14%	17%	13%	20%	20%

Source: ADOLWD.

**Table 47: Resident and Nonresident Worker Unemployment Claims Paid in Alaska's Oil and Gas Industry, 2004-2010**

NAICS		2004	2005	2006	2007	2008	2009	2010
All	All Oil & Gas Sectors							
	Total All \$ paid	\$4,053,802	\$3,156,474	\$2,148,838	\$2,664,003	\$3,703,639	\$11,867,050	\$9,794,710
	Resident \$ paid	\$3,361,587	\$2,578,092	\$1,841,704	\$2,186,705	\$3,204,609	\$9,296,525	\$7,813,423
	Nonresident \$ paid	\$692,215	\$578,382	\$307,134	\$477,298	\$499,030	\$2,570,525	\$1,981,287
	% Nonresident	17%	18%	14%	18%	13%	22%	20%
211	Oil and Gas Extraction							
	Total 211 \$ paid	\$283,735	\$129,599	\$93,856	\$36,445	\$28,592	\$296,859	\$360,320
	Resident \$ paid	\$239,551	\$93,879	\$85,424	\$33,947	\$16,936	\$260,201	\$304,976
	Nonresident \$ paid	\$44,184	\$35,720	\$8,432	\$2,498	\$11,656	\$36,658	\$55,344
	% Nonresident	16%	28%	9%	7%	41%	12%	15%
213111	Drilling for O&G							
	Total 213111 \$ paid	\$518,470	\$349,196	\$258,215	\$388,748	\$479,788	\$2,118,371	\$1,309,833
	Resident \$ paid	\$425,081	\$319,808	\$232,757	\$323,878	\$430,036	\$1,607,076	\$1,036,280
	Nonresident \$ paid	\$93,389	\$29,388	\$25,458	\$64,870	\$49,752	\$511,295	\$273,553
	% Nonresident	18%	8%	10%	17%	10%	24%	21%
213112	Support Activities							
	Total 213112 \$ paid	\$3,251,597	\$2,677,679	\$1,796,767	\$2,238,810	\$3,195,259	\$9,451,820	\$8,124,557
	Resident \$ paid	\$2,696,955	\$2,164,405	\$1,523,523	\$1,828,880	\$2,757,637	\$7,429,248	\$6,472,167
	Nonresident \$ paid	\$554,642	\$513,274	\$273,244	\$409,930	\$437,622	\$2,022,572	\$1,652,390
	% Nonresident	17%	19%	15%	18%	14%	21%	20%

Source: ADOLWD.

## Former Alaska Residents in the Oil and Gas Industry Workforce

Oil and gas industry participants have noted their awareness of a number of nonresident oil and gas industry workers who are former Alaska residents. To quantify this, the study team asked ADOLWD to measure the number of 2009 nonresident oil and gas industry workers who appear in previous years' PDF application files. The results of that query are provided in the following table. Among the 4,863 workers classified as nonresident in 2009, a total of 812 (16.7 percent) had been Alaska residents at some point since 2004. Though not quantified in this analysis, it is likely a similar analysis carried back to years prior to 2004 would identify additional nonresident oil and gas industry workers who are former Alaska residents.

**Table 48: Former Alaska Residents in the Oil and Gas Industry Workforce, 2009**

	Workers	Percent
Total 2009 Nonresident Oil & Gas Industry Workers	4,863	100%
2009 Nonresident Oil & Gas Industry Workers by Year of Most Recent Alaska Residency		
2008	269	5.5%
2007	152	3.1%
2006	133	2.7%
2005	142	2.9%
2004	116	2.4%
2009 Nonresident Oil and Gas Industry Workers Who Were Residents at Least One Year Between 2004 and 2008	812	16.7%
2009 Nonresident Oil and Gas Industry Workers Who Were Not Residents Between 2004 and 2008	4,051	83.3%

Source: ADOLWD.

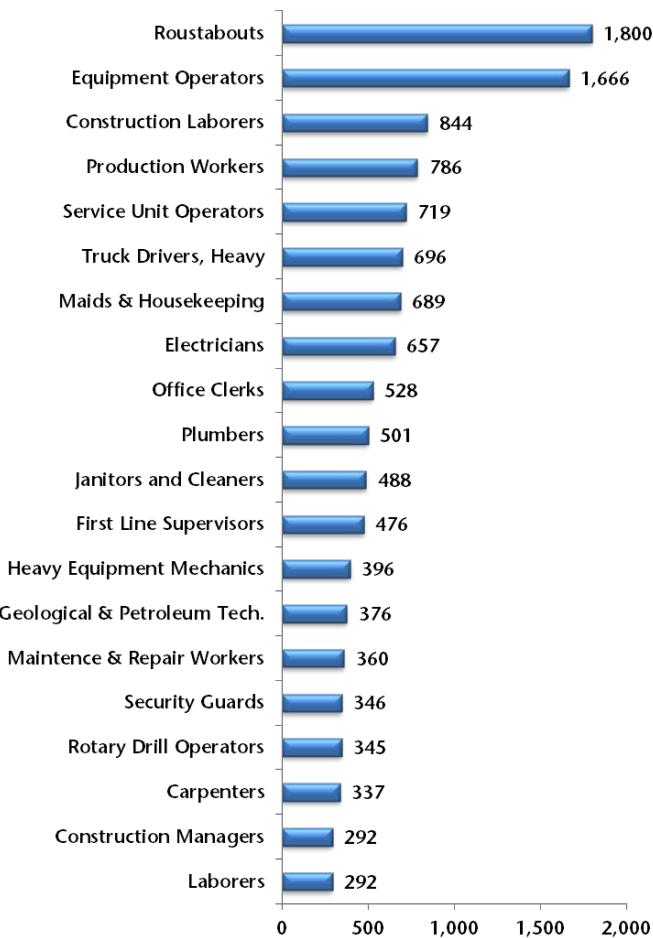
# Chapter 4. Oil and Gas Industry Occupational Analysis

## Top North Slope Occupations

ADOLWD maintains an Occupational Database (ODB) that contains occupation and place-of-work information for each wage and salary worker covered by unemployment insurance in Alaska. While occupational data is only available at the borough or census area level, the North Slope Borough data contained in the ODB does provide useful data on the number of workers and total wages by occupation for oil and gas industry-related positions.

A total of 1,800 North Slope Borough workers were classified as oil and gas industry Roustabouts in 2009. These workers earned a total of \$93.4 million. The average number of workers in Roustabout positions over the year was 1,399.

**Figure 30: Top 20 North Slope Borough Occupations, Total Worker Count, 2009**



Source: ADOLWD.

Second on the list of top North Slope occupations is Operating Engineers and Other Construction Equipment Operators. In 2009, a total 1,666 workers were employed in this occupation, earning a total of \$88.3 million. Other occupations include Construction Laborers (844 in 2009); Production Workers, All Other (786); Service Unit Operators Oil, Gas, and Mining (786); and Truck Drivers, Heavy and Tractor Trailer (696). The top 30 occupations are listed in the following table.

Among the top North Slope Borough occupations, total wages were highest for those occupations with the largest number of workers (Roustabouts and Equipment Operators). Occupations that account for the next highest percentage of total wages in 2009 included Construction Trades and Extraction Workers, with \$40 million in wages and 476 total workers; Electricians, with \$34.8 million in wages and 657 total workers; Truck Drivers, Heavy and Tractor Trailer, with \$28.3 million in wages and 696 total workers; and Geological and Petroleum Technicians, with \$25.9 million in wages and 376 total workers.

**Table 49: Top 30 North Slope Borough Occupations, Quarterly and Total Counts, Total Wages, 2009**

Occupational Title	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total Count (individuals)	Total Wages
Roustabouts, Oil and Gas	1,525	1,554	1,335	1,183	1,800	\$93,435,207
Operating Engineers and Other Construction Equipment Operators	1,329	1,426	1,031	1,019	1,666	88,281,952
Construction Laborers	508	521	422	342	844	24,067,686
Production Workers, All Other	776	757	15	2	786	--
Service Unit Operators, Oil, Gas, and Mining	561	548	540	474	719	--
Truck Drivers, Heavy and Tractor Trailer	532	598	320	354	696	28,280,525
Maids and Housekeeping Cleaners	501	494	445	416	689	15,271,196
Electricians	423	458	383	398	657	34,793,109
Office Clerks, General	346	339	330	295	528	23,945,373
Plumbers, Pipefitters, and Steamfitters	350	311	280	170	501	21,392,199
Janitors and Cleaners, Except Maids	268	191	289	230	488	--
First Line Supervisors/Managers of Construction Trades and Extraction Workers	368	358	315	327	476	39,971,305
Mobile Heavy Equip. Mechanics, Exc. Engines	335	363	316	311	396	23,986,636
Geological and Petroleum Technicians	314	325	292	291	376	25,930,317
Maintenance and Repair Workers, General	244	254	254	244	360	15,897,859
Security Guards	271	268	229	262	346	--
Rotary Drill Operators, Oil and Gas	285	287	234	294	345	--
Carpenters	210	207	186	215	337	12,318,894
Construction Managers	236	238	228	230	292	--
Laborers and Freight, Stock, and Material Movers, Hand	222	89	220	94	292	4,462,035
Food Preparation Workers	186	205	162	154	277	--
Welders, Cutters, Solderers, and Brazers	178	189	155	156	263	14,384,084
Office & Admin. Support Workers, All Other	181	176	186	185	258	11,744,530
Inspectors, Testers, Sorters, and Samplers	199	198	198	190	218	--
Petroleum Pump System Operators, Refinery Operators, and Gaugers	199	202	192	188	207	--
Secretaries, Exc. Legal, Medical, & Executive	131	124	124	135	202	5,225,105
Production & Operating Workers, Supervisors/First Line Managers	181	183	47	37	201	--
Petroleum Engineers	152	165	118	127	199	22,561,825
Recreation Workers	77	80	83	95	192	857,263
Structural Iron and Steel Workers	157	151	141	141	192	--

Source: ADOLWD. Wage data is not available due to confidentiality restrictions when there are fewer than five workers in an area/occupation combination and also when one firm employs half or more of the workers in a particular area/occupation combination.

While the number of employees does vary over the course of a year within occupations, caution is urged in interpreting changes within an occupation over time. In many instances change from year-to-year and quarter-to-quarter are due to employers reclassifying positions in the forms submitted to ADOLWD (including for the occupational category Production Workers, All Other shown above).

## **Residency by Occupation**

While the majority of workers in almost all of the top 30 North Slope Borough occupations are Alaska residents, a substantial number of workers in each occupation are nonresident. The percentage of nonresident workers varies significantly by occupation. As of the fourth quarter of 2009, occupations with the highest proportion of nonresident workers (for occupations with more than 100 workers) include First-line Supervisors/Managers of Construction Trades and Extraction Workers (46 percent nonresident), Welders, Cutters, Solderers, and Brazers (45 percent nonresident), Construction Managers (44 percent nonresident), and Electricians (43 percent nonresident). The following table provides nonresident participation rates for the top 30 occupations in the North Slope Borough as of the fourth quarter of 2009 (the most recent available data). Similar data for the first three quarters of 2009 is provided in the appendix.

**Table 50: Workers by Occupation and Residency,  
North Slope Borough, 4<sup>th</sup> Quarter 2009**

Occupation	Total Workers	Resident	Nonresident	% Nonresident
Roustabouts, Oil and Gas	1,062	787	275	26%
Paving, surfacing, and tamping equipment operators	770	515	255	33%
Service unit operators, oil, gas, and mining	431	271	160	37%
Maids and housekeeping cleaners	357	320	37	10%
Electricians	346	197	149	43%
Geological and petroleum technicians	286	211	75	26%
Mobile heavy equipment mechanics, except engines	283	172	111	39%
Rotary drill operators, oil and gas	238	187	51	21%
Security guards	237	199	38	16%
Office clerks, general	216	139	77	36%
First-line supervisors/managers of construction trades and extraction workers	210	114	96	46%
Truck drivers, heavy and tractor-trailer	199	129	70	35%
Petroleum pump system operators, refinery operators, and gaugers	188	128	60	32%
Construction managers	188	106	82	44%
Construction laborers	174	142	32	18%
Welders, cutters, solderers, and brazers	138	76	62	45%
Structural iron and steel workers	138	91	47	34%
Plumbers, pipefitters, and steamfitters	129	83	46	36%
Carpenters	129	100	29	22%
Food preparation workers	123	107	16	13%
Cooks, all other	93	81	12	13%
Maintenance and repair workers, general	91	69	22	24%
Bus and truck mechanics and diesel engine specialists	83	58	25	30%
Petroleum engineers	81	58	23	28%
Control and valve installers and repairers, except mechanical door	78	34	44	56%
Installation, maintenance, and repair workers, all other	76	55	21	28%
Food preparation and serving related workers, all other	76	67	9	12%
Office and administrative support workers, all other	73	56	17	23%
Pump operators, except wellhead pumpers	62	46	16	26%
Insulation workers, floor, ceiling, and wall	56	23	33	59%

Source: ADOLWD.

Among the North Slope Borough occupations most likely to be linked solely with the oil and gas industry, the total number of workers has increased over the past five years. The total number of Roustabouts increased most markedly, from an average of 493 over the year in 2004 to an average of 1,282 over the year in 2009. Other occupations with relatively high growth in number of workers are Operating Engineers and Other Construction Equipment Operators (from an average of 235 in 2004 to an average of 855 in 2009) and Service Unit Operators, Oil, Gas, and Mining (from an average of 127 in 2004 to an average of 481 in 2009).

**Table 51: Total Workers by Occupation, 1<sup>st</sup> and 3<sup>rd</sup> Quarters, 2004-2009**

Occupations	2004		2005		2006		2007		2008		2009	
	1st	3rd	1st	3rd	1st	3rd	1st	3rd	1st	3rd	1st	3rd
Geological & Petroleum Technicians	129	139	136	127	142	301	184	166	276	310	319	287
First-line Supervisors/Managers Construction	243	213	171	159	197	313	329	284	235	244	243	235
Operating Engineers	223	234	231	278	294	297	341	330	891	836	924	826
Rotary Drill Operators	109	194	229	128	118	246	255	212	245	241	258	231
Service Unit Operators	166	115	173	164	205	199	281	320	342	477	494	489
Roustabouts	510	491	515	556	657	867	1,070	1,125	1,327	1,445	1,410	1,256
Petroleum Pump Operators	170	173	171	179	185	191	219	195	196	199	202	193
Truck Drivers, Heavy	107	98	134	114	175	114	243	156	233	159	284	188

Source: ADOLWD.

As the number of workers in North Slope occupations increased, the percentage of nonresident workers remained fairly steady, varying by a few percentage points per year, for most occupations. The only occupation in which the percentage of nonresident workers changed markedly over the past five years is First-Line Supervisors/Managers of Construction Trades and Extraction Workers. The average number of nonresident workers in this occupation grew from an average of 35 percent in 2004 to 47 percent in 2009. Also, the percentage of nonresident Operating Engineers and Other Construction Equipment Operators fell in 2008 and 2009 after remaining steady since 2004. In 2004 through 2007, the percentage of Operating Engineers who were nonresidents averaged 44 percent. As the numbers of workers in the occupation increased in 2008 and 2009, the percentage of nonresident workers fell to an average of 32 percent.

**Table 52: Nonresident Workers by Occupation, 1<sup>st</sup> and 3<sup>rd</sup> Quarters, 2004-2009**

Occupations	2004		2005		2006		2007		2008		2009	
	1st	3rd										
Geological & Petroleum Technicians	43	93	45	43	56	76	56	50	62	78	83	79
First-line Supervisors/Managers Construction	78	82	70	57	81	121	124	109	104	110	111	118
Operating Engineers	94	104	110	122	132	129	142	141	106	219	294	273
Rotary Drill Operators	22	33	50	24	28	57	64	56	61	54	54	49
Service Unit Operators	47	37	40	45	71	74	91	89	93	149	163	185
Roustabouts	148	141	159	172	201	262	306	303	344	382	366	313
Petroleum Pump Operators	59	59	61	62	69	67	72	63	64	61	66	61
Truck Drivers, Heavy	42	42	54	39	60	32	91	58	82	60	114	71

Source: ADOLWD.

**Table 53: Percent Nonresident Workers by Occupation, 1<sup>st</sup> and 3<sup>rd</sup> Quarters, 2004-2009**

Occupations	2004		2005		2006		2007		2008		2009	
	1st	3rd										
Geological & Petroleum Technicians	33%	67%	33%	34%	39%	25%	30%	30%	22%	25%	26%	28%
First-line Supervisors/Managers Construction	32%	38%	41%	36%	41%	39%	38%	38%	44%	45%	46%	50%
Operating Engineers	42%	44%	48%	44%	45%	43%	42%	43%	12%	26%	32%	33%
Rotary Drill Operators	20%	17%	22%	19%	24%	23%	25%	26%	25%	22%	21%	21%
Service Unit Operators	28%	32%	23%	27%	35%	37%	32%	28%	27%	31%	33%	38%
Roustabouts	29%	29%	31%	31%	31%	30%	29%	27%	26%	26%	26%	25%
Petroleum Pump Operators	35%	34%	36%	35%	37%	35%	33%	32%	33%	31%	33%	32%
Truck Drivers, Heavy	39%	43%	40%	34%	34%	28%	37%	37%	35%	38%	40%	38%

Source: ADOLWD.

## Demographics by Occupation

Alaska's senior population is growing at a faster rate than senior populations in all other U.S. states.<sup>8</sup> Eighteen percent of Alaskans are between the age of 51 and 65. The number of Alaskans over 65 is expected to more than double between 2010 and 2034, while the number of working age Alaskans (age 18 to 64) is expected to grow by 11 percent during the same period.<sup>9</sup> Some Alaska industries and occupations are subject to a much higher proportion of workers near retirement age than others. Alaska industries that are facing a substantial increase in retirees include construction, health care, and state and local government.<sup>10</sup>

Within the Alaska oil and gas industry, many workers began their careers with the 1970's oil boom and construction of the TAPS. As these workers age and near retirement, major oil and gas companies on the North Slope recognize a need to increase recruitment in Alaska. The need for recruitment is intensified by a projected increase in demand for oil and gas employees for many occupations in Alaska.

Many Prudhoe Bay Zone occupations with over 100 workers exhibit a high average age among the workforce. A high average age signals that, as a whole, the workers within the occupation are closer to retirement.

Petroleum Pump System Operators, Refinery Operators, and Gaugers had the highest average age (47 years) in 2009 (the most recent data available). As the following figure illustrates, the bulk of workers in this occupation moves closer to retirement age each year. Generally, a younger cohort of replacements is not in the pipeline to replace those nearing retirement. In addition to a presently aging workforce, the number of workers in this occupation is projected to increase in Alaska by 7.4 percent by 2018.<sup>11</sup>

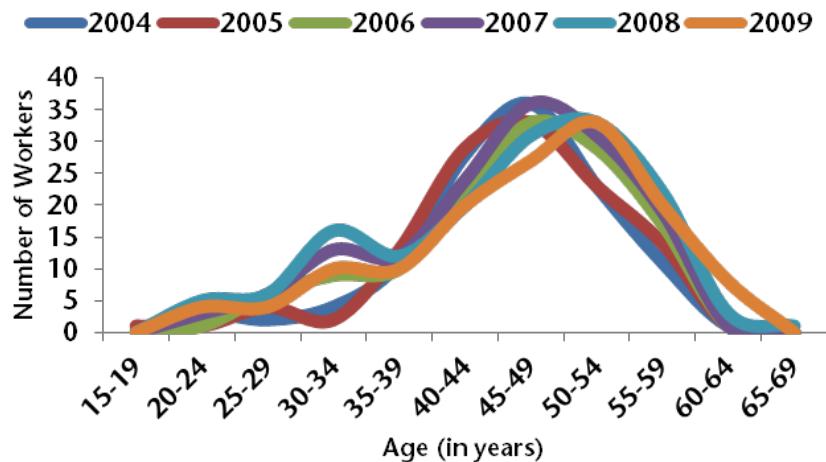
<sup>8</sup> FY2010 Annual Report. Alaska Commission on Aging.

<sup>9</sup> ADOLWD, Alaska Population Projections, 2010 – 2034.

<sup>10</sup> ADOLWD, Alaska Economic Trends. June 2005.

<sup>11</sup> ADOLWD, Alaska Occupational Forecast 2008-2018.

**Figure 31: Age of Petroleum Pump System Operators, Refinery Operators and Gaugers in the Prudhoe Bay Zone, 2004-2009**

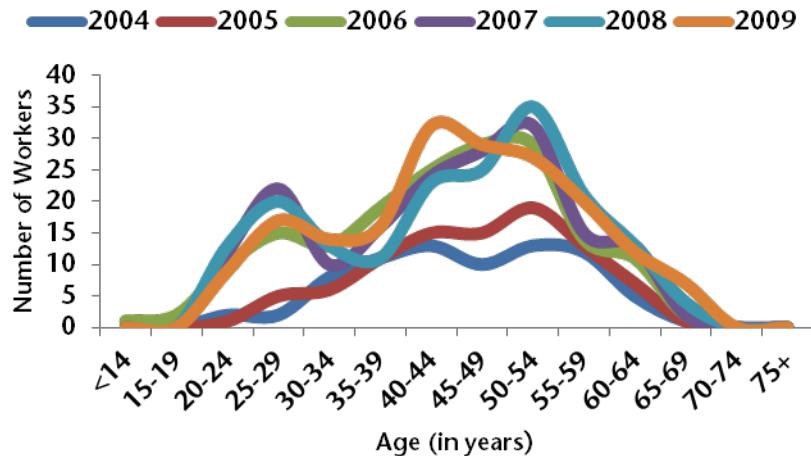


Source: ADOLWD.

Other occupations with a high mean age in 2009 include First-Line Supervisors/Managers of Construction Trades and Extraction Workers (average age 46 years); Truck Drivers, Heavy and Tractor-Trailer (average age 45 years); Operating Engineers and Other Construction Equipment Operators (average age of 44 years); and Mobile Heavy Equipment Mechanics, Except Engines (average age 42 years). The ADOLWD forecasts an increase in employment of over 10 percent for all of these occupations between 2008 and 2018.

Some of the occupations with a high average age for workers exhibit the same age curve as Petroleum Pump System Operators, Refinery Operators, and Gaugers. For several others, additional peaks in the age curve indicate new workers and trainees in line to replace retiring workers. The following graph for Truck Drivers, Heavy and Tractor-Trailer illustrates the presence of a younger cohort within the occupation.

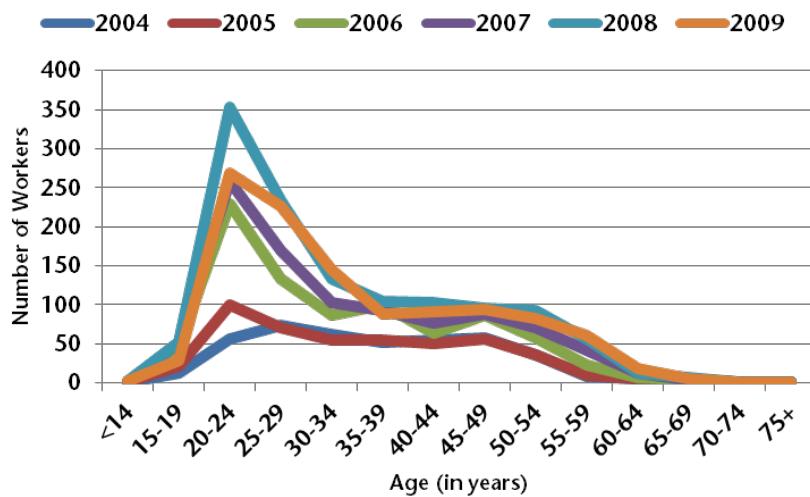
**Figure 32: Age of Truck (Heavy and Tractor-Trailer) Drivers, in the Prudhoe Bay Zone, 2004-2009**



Source: ADOLWD.

Several occupations in the Prudhoe Bay Zone have much lower average ages. Roustabouts, Rotary Drill Operators, and Service Unit Operators all had an average age of 36 or 37 in 2004. That number fell to an even younger mean age by 2009 for all three occupations, in part signaling an increase in new, younger workers. In 2009, the average age was 34 for Roustabouts, 33 for Rotary Drill Operators, and 36 for Service Unit Operators. The average age for Geological and Petroleum Technicians has also decreased, from 39 in 2004 to 35 in 2009. The number of employees in these positions in Alaska is also projected to grow between 2008 and 2018: by 9 percent for Roustabouts; 9.5 percent for Rotary Drill Operators; 9.7 percent for Service Unit Operators; and 10.9 percent for Geological and Petroleum Technicians.

**Figure 33: Age of Roustabouts in the Prudhoe Bay Zone, 2004-2009**



Source: ADOLWD.

Below are tables with additional demographic information on Prudhoe Bay Zone workers in 2004 and 2009 (the most recent detailed data available).

**Table 54: Demographic Information of Prudhoe Bay Zone Workers, 2004**

Occupation	Female Workers	Male Workers	Total Workers	Average Age
Roustabouts, oil and gas	8	410	418	36
Maids and housekeeping cleaners	172	63	235	42
Rotary drill operators, oil and gas	2	190	192	36
Security Guards	17	153	170	48
Operating engineers and other construction equipment operators	1	154	155	45
First-line supervisors/managers of construction trade and extraction workers	0	151	151	42
Petroleum pump system operators, refinery operators, and gaugers	5	114	119	45
Food preparation workers	22	95	117	38
Construction laborers	9	106	115	34
Electricians	2	109	111	41
Service unit operators, oil, gas, and mining	4	105	109	37
Geological and petroleum technicians	7	95	102	39
Laborers and freight, stock, and material movers, hand	24	69	93	25
Truck drivers, heavy and tractor-trailer	3	74	77	46
Welders, cutters, solderers, and brazers	2	64	66	44
Electrical and electronic engineering technicians	0	65	65	41
Office clerks, general	53	11	64	42
Plumbers, pipefitters, and steamfitters	2	59	61	32
Installation, maintenance, and repair workers, all other	6	45	51	49
Food preparation and serving related workers, all other	9	41	50	40
Chefs and head cooks	11	38	49	47
Bus and truck mechanics and diesel engine specialists	0	47	47	41
Petroleum Engineers	7	36	43	41
Janitors and cleaners, except maids and housekeeping cleaners	13	29	42	44
Customer service representatives	4	38	42	41
Derrick operators, oil and gas	1	41	42	42
Electrical and electronics repairers, commercial and industrial equipment	1	37	38	36
Maintenance and repair workers, general	0	34	34	47
Control and valve installers and repairers, except mechanical door	1	32	33	41
Occupational health and safety specialists	3	29	32	46

Source: ADOLWD.

**Table 55: Demographic Information of Prudhoe Bay Zone Workers, 2009**

Occupation	Female Workers	Male Workers	Total Workers	Average Age
Roustabouts, oil and gas	39	1,071	1,110	34
Operating engineers and other construction equipment operators	16	658	674	44
Maids and housekeeping cleaners	393	105	498	39
Service unit operators, oil, gas, and mining	34	375	409	36
Electricians	12	266	278	38
Construction laborers	26	245	271	34
Geological and petroleum technicians	9	245	254	35
Security guards	21	205	226	50
Mobile heavy equipment mechanics, except engines	1	196	197	42
Rotary drill operators, oil and gas	2	188	190	33
Truck drivers, heavy and tractor-trailer	4	179	183	45
Bartenders	52	129	181	36
Office clerks, general	90	90	180	45
Plumbers, pipefitters, and steamfitters	7	165	172	35
Carpenters	3	134	137	36
Petroleum pump system operators, refinery operators, and gaugers	6	130	136	47
First-line supervisors/managers of construction trades and extraction workers	4	122	126	46
Transportation, storage, and distribution managers	4	111	115	47
Laborers and freight, stock, and material movers, hand	33	73	106	27
Structural iron and steel workers	0	99	99	35
Welders, cutters, solderers, and brazers	1	96	97	43
Cooks, all other	18	77	95	44
Food preparation and serving related workers, all other	23	66	89	33
Bus and truck mechanics and diesel engine specialists	0	82	82	40
Maintenance and repair workers, general	0	80	80	46
Office and administrative support workers, all other	65	7	72	41
Helpers -- extraction workers	0	70	70	33
Janitors and cleaners, except maids and housekeeping cleaners	12	52	64	39
Petroleum engineers	10	51	61	41
Installation, maintenance, and repair workers, all other	5	56	61	51

Source: ADOLWD.

# Chapter 5. Oil and Gas Industry Recruiting Practices

---

## Introduction

McDowell Group contacted oil industry companies to gather information regarding company recruiting practices, as well as the recruitment and retention challenges the companies face. In all, 30 companies were contacted and representatives from 22 firms responded for interviews. The companies interviewed represent North Slope oil and gas industry suppliers, service providers, and producers. In total, the interviewed companies employ approximately 6,500 workers in Alaska. The interviewed companies range in size from under 20 employees to over 3,000. The study team also met with representatives of several trade unions to gain their perspective on North Slope workforce development and recruiting issues.

In the interviews, information was gathered on recruiting practices for North Slope employees. The extent to which the companies work with the ADOLWD on recruitment was also addressed. Companies were asked to identify which positions were the most difficult to fill with qualified Alaskans as well as the most significant challenges the companies face recruiting and retaining Alaskan employees.

## Recruitment Methods

Companies were asked to describe their recruitment processes, including if they recruit in-state, out-of-state, or both for North Slope positions. They were also asked if their recruitment practices include any special provisions to attract Alaskans to company positions in the state. Finally, companies were asked to describe the challenges they face recruiting and retaining employees in Alaska.

Two-thirds of the companies interviewed recruit both in-state and out-of-state. The remaining third of the companies reported they recruit either exclusively or predominately in Alaska. Among those companies that conduct some recruitment out-of-state, the majority report operating under policies that prioritize Alaska hire.

It is not uncommon for companies to rely primarily on word of mouth or on employee recommendations for new employee recruitment. Others post positions solely on the company website or websites geared toward specific professions. The remaining companies frequently connect with the Alaska workforce through a variety of popular job search venues. These venues comprise state job centers, including the ADOLWD's ALEXsys system, local publications, online job sites (such as Craigslist), or union halls.

### THE ALASKA LABOR EXCHANGE SYSTEM (ALEXsys)

ADOLWD's ALEXsys website operates as the main State of Alaska portal for job seekers and employers. Job seekers may search listings for positions with state government or private entities. They may also post resumes on the site for review by potential employers. Employers may search for a candidate by educational level, geographic area of interest (e.g. North Slope), by certificate or professional license (including driver's

license class), or by occupational group. Resources available to both employers and job seekers include information on local labor markets and on educational and training programs.

A search on November 28, 2011 yielded 42 positions on ALEXsys for North Slope/Prudhoe Bay (a subsection of a search for jobs within the North Slope Borough). Within those positions, a search on the same day for jobs using the keyword "oil" in the North Slope Borough yielded 30 positions. A search using the keyword "gas" resulted in 24 listings (many of these positions were the same as those found when searching for "oil" positions). Listings included administrative and support, logistical support, general labor, and industry specialist positions. A sample of jobs available for that particular search includes: Administrative Assistant, Cook-Baker, Drilling Support Bed Truck/Lowboy Operator, Field Mechanical Engineer, Fueler, Health, Safety, Environment and Training Specialist, Housekeeper, Heavy Equipment/Loader Operator, Journeyman Electrician, Mechanic - Heavy Duty, Mechanic – Light Duty, Project Manager, and Scaffold Builder III.

In addition to ALEXsys, ADOLWD also works with several companies to enhance recruitment in Alaska, including apprenticeship programs with CH2M HILL and Kakivik Asset Management, LLC.

#### **CRAIGSLIST**

Craigslist is an online site that, among many services, allows employers to list open positions within a community. Four Craigslist communities currently operate in Alaska: Anchorage, Fairbanks, Kenai Peninsula, and Southeast. Several companies cited Craigslist as a main advertising venue for employee recruitment. In Anchorage, a search for "North Slope" positions yielded 23 positions listed in the past six weeks. Twelve of those positions were located on the North Slope and the rest were located in Anchorage with companies connected to the North Slope oil and gas industries. Positions listed for the North Slope included Offshore Supervisor, Wellsite Geologist, Spreader Truck Operator, Field Chemist, and Certified Welder. Searches in Fairbanks, Southeast Alaska, and the Kenai Peninsula yielded very few or no positions for the search words "North Slope" and "Prudhoe Bay."

#### **TRADE UNIONS**

The unions also play a role in North Slope recruitment and employment. There are five crafts that are signatory to the North Slope Agreement: IBEW, Laborers, Teamsters, Plumbers and Pipefitters and the Operators unions. Contracting companies meet with the individual unions or the Alaska Petroleum Joint Crafts Council once they have a project in order to plan scheduling and strategy. The union dispatch system varies by union. The IBEW, for instance, uses a book system for recruitment. Those who can sign 'Book 1' in each of the four jurisdictions must meet the highest qualifications set by the union including a minimum one year residency in Alaska. The system descends to 'Book 4' in each jurisdiction: eligibility for 'Book 1' are union members who have the highest qualifications, most hours (2,080 hours in the last four years minimum) and a Journeyman's license; those union members eligible to sign 'Book 4' have the least experience and lack the required Alaska hours or residency. The majority of jobs are filled by union members from Books 1 and 2. Members must sign the books in person at the union hall during the first five working days of each month to be eligible to work, thereby making it impractical for out-of-state union members to work on most North Slope projects.

## OTHER RECRUITMENT NETWORKS

Aside from referrals and job listings, companies utilize a variety of other methods to secure a skilled workforce for North Slope positions. Several companies communicate with relevant university departments in Alaska, especially engineering, geoscience, and business departments. Local training schools and programs, including the Northern Training Institute and the Alaska Process Industry Careers Consortium (APICC) provide another source for employees and interns. Companies also supplement local training with in-house training and skill development.

## Recruitment and Retention Challenges

Despite a prevailing emphasis on Alaska hire, companies find a limited pool of qualified applicants in the state. Companies were asked to report the most significant challenges they face when recruiting in Alaska. They were also asked to identify which positions are especially difficult to fill with qualified Alaskans.

According to companies interviewed, skilled positions, or positions that require oil and gas specific experience, are difficult to fill with qualified Alaskans. These positions include engineers, including civil, drilling, petroleum, project, facility, process, and process safety engineers. Companies also mentioned well site leaders, geologists, petrophysicists, geophysicists, surveyors, and MBAs with specialized experience. Positions in specialty fields that companies find difficult to fill with qualified Alaskans include electricians, pipe handlers, pile drivers, welders, valve technicians, field service technicians, and directional drillers. Security guards, cooks, bakers and camp managers were among the other positions companies identified as difficult to fill on the North Slope.

Several companies also mentioned a general need for educated, skilled employees with clean driving records, especially for positions requiring commercial driver licenses (CDL) and CDL with Hazmat, in particular. Applicants must also be a high school graduate (or have a GED in some cases), pass a criminal background check, a physical fitness (Fitness for Duty) assessment and a drug test. Several companies reported failure rates for these criteria can be substantial, sometimes as high as 25 to 30 percent of the post-offer, pre-hire candidate pool.

Aside from the finite number of skilled Alaskans available for hire, companies cited a number of other factors that pose significant challenges to recruiting and retaining workers for North Slope positions. The North Slope work life, which entails arctic weather and challenging work schedules (often 2 or 3 weeks on/ 2 or 3 weeks off rotations), is a challenging environment in which to recruit or retain employees. The cost of living in Alaska, especially the cost of housing, was also cited as an issue for recruiting employees to reside Alaska. The competitive nature of the North Slope job market requires companies to compete for the same pool of qualified workers within all of the oil and gas industry. Several companies mentioned issues with skilled employees leaving to work at other companies within the industry, both in Alaska and the Lower 48 (North Dakota was often mentioned).

## Employee Incentives

Only a few of the companies interviewed provide compensation for transportation between an employee's hometown and a company pick-up point (usually Anchorage and/or Fairbanks). The majority of companies

do not cover transportation costs for employees to and from pick-up points, especially out-of-state employees.

Incentives are sometimes used by companies to overcome recruitment and retention challenges. Almost half of the companies interviewed provide compensation premiums for Alaska employees usually in the form of a cost of living adjustment. The other half reported they do not provide incentives for Alaska-based employees. Only a few of the companies interviewed provide compensation for transportation between an employee's hometown outside Alaska and a company pick-up point (usually Anchorage and/or Fairbanks). Often, if transportation for a non-Alaska based employee is paid, it is for an employee with a highly specialized skill set or for someone in a senior (executive) level position. The majority of companies do not cover transportation costs for employees to travel to or from the established pick-up points, regardless of whether the employee lives elsewhere in Alaska or outside the state. In fact, several companies require their employees to live in Alaska.

## **Demand for Oil and Gas Employees Outside of Alaska**

Demand for workers in the oil and gas industry is increasing in several areas outside Alaska, including North Dakota, Texas, and Alberta, Canada. Oil production has increased in North Dakota from 35 million barrels in 2005 to 113 million barrels in 2010. In 2010, North Dakota ranked fourth nationally in crude oil production among oil producing states (excluding offshore oil production). With this increase in production, direct employment in North Dakota's petroleum industry has climbed from approximately 5,000 jobs in 2005 to over 18,000 jobs in 2009.<sup>12</sup>

Crude oil production in Texas has risen from 388 million barrels in 2005 to 427 million barrels in 2010 as technological advances have allowed for production of previously inaccessible reservoirs in the state. According to projections from the Texas Workforce Commission, employment in the Texas oil and gas extraction industry is expected to increase by 18,900 jobs (a 23.1 percent rise) between 2008 and 2018.

In Alberta, Canada, demand for workers in oil and gas occupations is expected to grow over the next decade (by 0.9 to 2.8 percent per year between 2011 and 2015). Investment in Alberta's oil sands has increased from \$1.7 billion in 1997 to \$13 billion in 2010.

Additionally, many of the jobs located elsewhere in North America do not require rotation schedules similar to what is required on the North Slope.

---

<sup>12</sup> Bangsund and Leistritz. Petroleum Industry's Economic Contribution to North Dakota in 2009. Agribusiness and Applied Economics Report 676. December 2010. Department of Agribusiness and Applied Economics Agricultural Experiment Station North Dakota State University

## A Case Study in Workforce Development and Alaska Resident Hire

Recruiting practices in Alaska's oil and gas industry vary from firm to firm, with some firms working more diligently than others to support Alaska workforce development and resident hire. CH2M HILL is among the largest North Slope employers and among the most proactive firms in terms of Alaska hire. This case study profile was prepared to illustrate some of the workforce development practices, recruiting practices, and recruiting challenges among Alaska's oil and gas industry firms.

CH2M HILL is a global engineering, construction and operations firm with more than 30,000 employees worldwide, including 2,600 workers in Alaska and currently about 2,000 active employees on the North Slope. In 2010, CH2M HILL employed an average of 2,486 North Slope workers, with peak employment of 2,871. CH2M HILL, an employee-owned firm, made a major step into Alaska's oil and gas industry with its acquisition of VECO in 2007.

According to the latest ADOLWD data (and based on ADOLWD's PFD application-based methodology), approximately one-third of CH2M HILL Alaska employees are nonresidents. CH2M HILL's statewide nonresident worker rate was 32.5 percent in 2009, down from 35.5 percent in 2008.

In recent years, CH2M HILL has taken a number of steps to increase opportunities for Alaska resident participation in its oil and gas industry-related workforce. Most notable is its General Maintenance Technician (GMT) Training Program, hosted in King Salmon at the Southwest Alaska Vocational and Educational Center (SAVEC). The program is intended to prepare Alaska residents for entry-level positions on the North Slope. In an effort to replicate actual North Slope work-day conditions the program is conducted seven days-a-week, 12 hours a day, over a three-week period. CH2M HILL does two training cycles, the first targeted for residents of rural communities; the second has targeted military veterans. Approximately two-thirds of the program's graduates are Alaska Native. Lodging, meals, and books are provided to students under the State Training and Employment Program (STEP), a program administered by ADOLWD, Division of Business Partnerships.

The GMT program's first class of 32 students graduated in May 2008. All but one of the graduates were placed in either the North Slope Electrical Apprenticeship Construction or OMS (Operations Maintenance Services) General Maintenance Technicians (GMT) positions supporting BP operations. The program has produced 146 graduates with a 96 percent placement rate.

GMT applicant competition and screening is rigorous; a total of 500 applications have been submitted to date. Potential students must meet basic educational requirements, and pass a thorough background check and pre-training drug tests.

In general, CH2M HILL's hiring policy places top priority on internal employees, followed by Alaska residents, then nonresident applicants at the lowest tier. CH2M HILL has taken a number of measures (in addition to creating the GMT program) to recruit Alaska residents. For example, the firm has:

- Hired a workforce development manager whose primary focus is on Alaska resident recruitment
- Established a guideline requiring Alaska residency for its entry level positions
- Posts all job openings on the ADOLWD ALEXsys website as well as the CH2M HILL site

- Plays a leadership role in Alaska workforce development by having representatives on the Alaska Process Industry Careers Consortium (APICC) Board of Directors and the AVTEC Advisory Board.

CH2M HILL does not pay transportation costs for nonresident employees to fly to hometowns outside of Alaska. Transportation is normally only paid between pick up points in Anchorage or Fairbanks and the North Slope except for occasional construction ramp-up specialty positions where first flights up and last flights out are sometimes paid.

Though CH2M HILL makes substantial effort to recruit Alaskans, the company faces significant challenges finding Alaska residents who possess the required oil and gas industry specific skills and experience including: Instrument Technicians, Journeyman Electricians, Welders (especially copper/nickel welders), Fitters, Valve Technicians and Fire and Gas Technicians are often difficult positions to fill with Alaskans. Among professional staff, Field Engineers, HSE Professionals, and Quality Control professionals can also be difficult to recruit in Alaska.

Other positions can be difficult to fill, depending on the circumstances. Quick ramp-ups can require recruiting outside Alaska. Finding qualified Alaskans to work in short-term seasonal construction positions and finding Alaskans who are accustomed to (or can adapt to) working remote rotational schedules (such as 2 weeks on/2 weeks off, or 4/2, or 6/2 shift schedules) are also significant challenges for CH2M HILL.

CH2M HILL, like other oil and gas industry companies, faces other challenges in retaining workers with Alaska residency. For example, North Slope rotational shift work makes it possible for workers to reside wherever they choose. Some long-time Alaskan CH2M HILL employees (or original Alaskan VECO employees) have chosen to relocate to Lower 48 locations for various personal reasons. Discouraging or limiting this flexibility would not be in the best interest of retaining the highest-skilled, most experienced workers.

Additionally, in interviews with CH2M HILL, the firm's HR leadership noted they face significant challenges in "finding Alaska workers who can meet all the minimum hiring standards – high school graduation, passing drug and alcohol tests, having acceptable DMV records, having no felony convictions, and physically fit for duty." A high percentage of the post-offer, pre-hire applicants cannot pass one or more of these minimum standards.

Beyond the North Slope, CH2M HILL has a well-established high school drafting and design engineering training program, welding program, and college engineering internship and graduate recruiting programs which all target Alaska residents.

Finally, CH2M HILL representatives noted, as did several other oil field services firms and producers interviewed for purposes of this study, that safety was the paramount consideration in all matters related to recruiting, training and retention.