

DETAILED OCCUPATIONAL DATA

NORTH DAKOTA OIL AND NATURAL GAS

WORKFORCE NEEDS AND SKILLS STUDY

2010

Study Conducted by:
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Top 25 Occupations by Number of Workers - 2010-2015

2010			2011			2012			2013			2014			2015		
SOC Code	Expected Employment	Replacement Employment	SOC Code	Expected Employment	Replacement Employment	SOC Code	Expected Employment	Replacement Employment	SOC Code	Expected Employment	Replacement Employment	SOC Code	Expected Employment	Replacement Employment	SOC Code	Expected Employment	Replacement Employment
47-5013	3680	1622	53-7072	3763	1175	53-7072	3815	1175	53-7072	3864	1175	53-7072	3909	1175	53-7072	3962	1175
47-5012	2880	447	47-5013	2921	1004	47-5013	2854	1027	47-5013	2901	1090	47-5013	2956	1123	47-5013	2998	1175
53-7072	2076	0	47-5012	2084	461	47-5012	1855	36	47-5012	1853	36	47-5012	1853	36	47-5012	1858	39
49-9043	900	239	49-9043	1034	333	49-9043	1139	245	49-9043	1139	287	49-9043	1139	266	49-9043	1139	245
23-2093	885	134	23-2093	885	134	23-2093	885	117	23-2093	885	117	11-9141	826	33	11-9141	826	33
11-9141	796	62	11-9141	816	52	11-9141	826	52	11-9141	826	33	53-3032	744	235	53-3032	749	240
11-3051	638	7	53-3032	586	182	53-3032	698	197	53-3032	715	206	23-2093	718	50	23-2093	718	50
47-1011	563	55	47-5099	545	216	47-5099	567	224	47-5099	575	224	47-5099	583	232	47-5099	591	232
47-5099	523	131	11-3051	534	2	11-3051	533	2	11-3051	533	2	11-3051	533	2	11-3051	533	2
53-3032	452	134	47-1011	501	50	17-2171	496	71	17-2171	498	71	17-2171	495	71	17-2171	499	75
11-1021	412	54	17-2171	498	75	47-1011	462	50	47-1011	462	50	47-1011	462	52	47-1011	462	52
49-9051	406	48	49-9051	482	60	11-1021	438	35	11-1021	446	39	11-1021	444	33	11-1021	444	30
47-5071	326	81	11-1021	448	46	49-9051	415	62	43-5071	383	47	43-5071	383	49	43-5071	383	47
17-2171	322	0	43-5071	383	96	43-5071	383	47	49-9051	367	43	51-1011	371	48	51-1011	379	47
51-1011	285	23	51-1011	341	43	47-5071	354	65	51-1011	363	46	47-5071	340	93	47-5071	373	82
43-5071	282	0	47-5071	335	90	51-1011	349	44	47-5071	354	84	43-9061	299	49	43-9061	301	47
43-9061	236	21	43-9061	314	71	43-9061	297	56	43-9061	297	45	49-9051	295	24	49-9051	295	26
47-5011	231	81	49-3031	276	53	49-3031	277	55	49-3031	280	51	49-3031	280	53	49-3031	280	51
43-9071	217	0	47-5011	253	100	47-5011	221	85	47-5011	221	86	47-5011	224	86	47-5011	224	86
49-3031	204	8	43-9071	217	0	43-9071	217	0	43-9071	217	0	43-9071	217	0	43-9071	217	0
43-6014	159	37	49-9042	189	67	49-3042	172	63	49-3042	193	84	49-3042	193	105	49-3042	214	126
49-9042	153	58	51-8093	161	6	51-8093	169	10	51-8093	178	9	51-8093	186	9	51-8093	195	13
51-8093	146	1	49-3042	160	47	49-9042	165	49	49-9042	165	50	49-9042	169	57	49-9042	169	54
49-3042	134	30	43-6014	146	25	49-1011	138	15	49-1011	138	11	43-6014	142	25	43-6014	142	27
47-2073	105	19	47-5081	136	58	53-7071	138	5	43-6014	132	30	49-1011	138	9	49-1011	142	11

11-1021 General and Operations Mgrs
 11-3051 Industrial Production Managers
 11-9141 Property, Real Estate, and Community Assn Mgrs
 11-9199 Manager, Tool Pusher, Production Superintendent, Production Supervisor, Land Supervisor, Drilling Superintendent, Drilling Supervisor, Rig Manager, Plant Manager, Quality Manager
 17-2171 Petroleum Engineers
 23-2093 Title Examiners, Abstractors and Searchers
 43-5071 Shipping, Receiving and Traffic Clerks
 43-6011 Executive Assistant, Administrative Assistant, District Secretary
 43-6014 Secretaries Except Legal, Medical and Exec
 43-9061 Office Clerks, General
 43-9071 Office Machine Operators, Except Computer (includes digitizers)
 47-1011 1st Line Supv of Constr Trades and Extraction Workers
 47-2073 Equipment Operator
 47-2111 Electrician
 47-5011 Derrick operators, Oil and Gas
 47-5012 Rotary Drill Operators, Oil and Gas

47-5013 Service Unit Operators, Oil, Gas & Mining
 47-5071 Roustabouts, Oil and Gas (includes floorhands)
 47-5081 Motorman
 47-5099 Extraction Workers All Other
 49-1011 1st Line Supv of Mechanics, Installers and Repairer
 49-3031 Bus and Truck Mechanics and Diesel Engine Specialists
 49-3042 Mobile Heavy Equip Mgrs, Except Engines
 49-9042 Maintenance and Repair Workers, General
 49-9043 Maintenance Workers, Machinery
 49-9051 Electrical power-Line Installers and Repairers
 51-1011 St Line Supv/Mgrs of Production and Operation Workers
 51-8092 Gas Plant Operator
 51-8093 Petroleum Pump System Operators, Refinery Operators, and Gaugers
 53-3032 Truck Drivers, Heavy and Tractor-Trailer
 53-7071 Compressor Operator, Chief Operator
 53-7072 Pump Operators Except Wellhead Pumpers
 53-7073 Lead Pumper, Field Operator, Production Forman

SOC Code	47-5013	O*Net Code	47-5013.00
Industry Occupational Titles			
<p>Service Unit Operators - Rig Operator - Oilfield Hands - Fishing Tool Hands</p> <p>Down Hole Hands - Well Head Hands - Casing Hands</p> <p>Rotary Head Hands - Flow-back Hands - Artificial Lift Hands</p> <p>Co-Rod Hands</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Operate equipment to increase oil flow from producing wells or to remove stuck pipe, casing, tools, or other obstructions from drilling wells.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; some short term "hands - on" vocational training.</p> <p><u>Knowledge:</u> Mechanical: Knowledge of machines and tools; including their design, uses, and repair and maintenance.</p> <p>Public <u>Safety</u> and <u>Security</u>: Knowledge of relevant equipment, policies, procedures, and strategies to promote local, state, or national security operations for the protection of people, data, property, and institutions.</p> <p><u>Operation</u> and Control: Controlling operations of equipment or systems.</p> <p><u>Operation Monitoring</u>: Watching gauges, dials, or other indicators to make sure a machine is working properly.</p> <p><u>Complex Problem Solving</u>: Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions and, <u>Critical Thinking</u>: using logic and reasoning to identify strengths and weaknesses of alternative solutions, conclusions or approaches to problems.</p>			
Special Notations			
<p><u>Physical</u>- Attributes: Persons in this occupation must be able to perform physical activities that require considerable use of their arms and legs and the moving of the whole body, such as climbing, lifting, balancing, walking, stooping and the handling of materials and, to perform those tasks; in all kinds of climatic conditions. Near Vision: The ability to see details at close range. <u>Identifying Objects, Actions, and Events</u>: Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events, through the use of, Critical Thinking.</p>			

SOC Code 47 - 5012		O*Net Code 47-5012.00
Industry Occupational Titles		
<p>Rotary Drill Operators, Oil and Gas:</p> <p>Other Reportable Titles:</p> <p>Driller, Daylight Driller, Drill Forman, Drill Operator, Drilling Rig Operator</p> <p>Motor Man, Oil Rig Driller, Oil Well Driller, Relief Driller</p>		
Industry's Workforce Skills Requirements		
<p><u>O*Net/General Industry Job Description:</u></p> <p>Set up or operate a variety of drills to remove petroleum products from the earth and to find and remove core samples for testing during oil and gas exploration and production.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; short term "hands on" vocational training; and, in some cases; an Associate Degree or a Bachelors Degree.</p> <p><u>Knowledge: Mechanical:</u> Knowledge of machines and tools; including their design, uses, repair and maintenance.</p> <p><u>Knowledge: Mathematics:</u> Knowledge of arithmetic, algebra, geometry and their applications.</p> <p><u>Administration and Management:</u> Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods and coordination of people and resources.</p> <p><u>Education and Training:</u> Knowledge of principles and methods for training and teaching of individuals and groups, and, to measure the effects of that training.</p> <p><u>Informational: Communications:</u> Be able to competently handle electronic communications, especially, as related to data based communications and spreadsheets.</p>		
Special Notations		
<p><u>Physical- Attributes:</u> Persons in this occupation must be capable of <u>multilimb coordination, static strength, near vision and far vision: capability long hours of job endurance;</u> and, be willing; to undergo periodic and/or mandated drug testing.</p> <p><u>Worker Activities - Attributes:</u> Persons in this occupation must be willing to handle and move <u>objects; repair and maintain mechanical equipment and operating vehicles,</u> and adhere to public safety/security and environmental policies in a team -workforce environment.</p>		

SOC Code 53-7072		O*Net Code 53-7072.00
Industry Occupational Titles		
<p>Pump Operators:</p> <p>Other Reportable Titles:</p> <p>Pumper, Outside Operators, Pipeline Operators, Day Light Relief Operators, Pump Station Operator, Chemical Operator, Logistics Technician, Process Operator, Purification Operator, Tank Car Loader</p>		
Industry's Workforce Skills Requirements		
<p><u>O*Net/General Industry Job Description:</u></p> <p>Tend, control, or operate power-driven, stationary, or portable pumps and manifold systems to transfer gases, oil, other liquids, slurries, or powdered materials to and from various vessels and processes.</p> <p><u>Education:</u> This occupation may require a high school education or a GED Certificate; or, in some cases; some short term "hands -on" vocational training.</p> <p><u>Knowledge: Mechanical:</u> Knowledge of machines and tools; including their design, uses, repair and maintenance.</p> <p><u>Production and Processing:</u> Knowledge of raw materials, production, process, quality control, costs, and other techniques for maximizing the effective handling and distribution of goods.</p> <p><u>Public Safety and Security:</u> Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.</p> <p><u>Education and Training:</u> Knowledge of principles and methods for training and teaching of individuals and groups, and, to measure the effects of that training.</p> <p><u>Computers and Electronics:</u> Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.</p>		
Special Notations		
<p><u>Physical - Attributes:</u> Persons in this occupation must be able to perform physical activities that require considerable use of their arms and legs and the moving of the whole body, such as climbing, lifting, balancing, walking, stooping and the handling of materials; and, to perform those tasks in all kinds of climatic conditions. <u>Near Vision:</u> The ability to see details at close range. <u>Processing Information:</u> Compiling, coding, categorizing, calculating, tabulating, auditing or verifying information/data; and, subsequently; documenting this data in written or electronic/magnetic format.</p>		

SOC Code	49-9043	O*Net Code	49-9043.00
Industry Occupational Titles			
<p>Shop/Field Mechanic - Shop Technician:</p> <p>Other Reportable Titles:</p> <p>Maintenance Technician - Mechanic - Maintenance Mechanic</p> <p>Machine Repairer - Maintainer - Maintenance Worker - Oiler</p> <p>Maintenance Machinist</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/ General Industry Job Description:</u></p> <p>Lubricate machinery, change parts, or perform other routine maintenance.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; some short term "hands - on" vocational training.</p> <p><u>Knowledge:</u> Mechanical: Knowledge of machines and tools; including their design, uses, repair and maintenance.</p> <p><u>Engineering and Technology:</u> Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to their designed utilization.</p> <p>Database user interface and query - Database software: this includes the use of spreadsheet software and work processing software to successfully utilize various equipment's operational manuals.</p> <p><u>Troubleshooting:</u> Determine causes of equipment or machinery operating errors and deciding what to do about it.</p> <p><u>Complex Problem Solving:</u> Identifying complex problems and reviewing related information to develop and evaluate options and solutions relative to vehicles and/or equipment needing maintenance and/or repair; and, subsequently repairing machines or systems using needed tools.</p>			
Special Notations			
<p><u>Manual Dexterity:</u> The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects. Near Vision: the ability to see details at close range. <u>Finger Dexterity:</u> The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects. <u>Deductive Reasoning:</u> The ability to apply general rules to specific problems to produce answers that make sense. <u>Inductive Reasoning:</u> The ability to combine pieces of information to form general rules or conclusions.</p>			

SOC Code	23-2093	:	O*Net Code	23-2093.00
Industry Occupational Titles				
<p>Title Examiners/Abstractors</p> <p>Other Reportable Titles:</p> <p>Title Officer - Title Searcher - Searcher</p> <p>Title Abstractor - Commercial Title Examiner - Title Department Manager</p> <p>Advisory Title Officer</p>				
Industry's Workforce Skills Requirements				
<p>O*Net/General Industry Job Description:</p> <p>Search real estate records, examine titles, or summarize pertinent legal or insurance details for a variety of purposes. May compile lists of mortgages, contracts, and other instruments pertaining to titles by searching public and private records for law firms, real estate agencies, or title insurance companies, and sometime digitizing the collected data.</p> <p>Education: This occupation may require a high school education or a GED Certificate, vocational school training, related on-the-job experience; or an associate's degree.</p> <p>Knowledge: English Language: Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.</p> <p>Knowledge: Interacting With Computers: Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.</p> <p>Knowledge: Getting Information: Observing, receiving, and otherwise obtaining information from all relevant sources.</p> <p>Knowledge: Documenting/Recording Information: Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.</p> <p>Knowledge: Processing Information: Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.</p>				
Special Notations				
<p>Performing Administrative Activities: Performing day-to-day administrative tasks such as maintaining information files and processing paperwork. Communicating with Persons Outside Organization: Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail. Analyzing Data or Information: Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.</p> <p>Communicating with Supervisors, Peers, or Subordinates: Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</p>				

SOC Code	11-9141	O*Net Code	11-9141.00
Industry Occupational Titles			
<p>Landman - Property/Real Estate Manager:</p> <p>Other Reportable Titles:</p> <p>Lease Administration Supervisor - Leasing Manager</p> <p>On-site Manager</p> <p>Community Property Manager</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net General Industry Job Description:</u></p> <p>Plan, direct, or coordinate selling, buying, leasing, or governance activities of commercial, industrial, or real estate properties, and, identifying properties; via, county and state records; for oil and gas mineral leasing and digitizing the lease data in order to successfully complete a proper and valid lease agreement.</p> <p>Education: This Occupation may require a high school education or a GED Certificate; or, in some cases; vocational school training, related on-the-job experience; or, in some case; an associate degree.</p> <p><u>Knowledge:</u> Mathematics: Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.</p> <p>Clerical: Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, digitizing public records, and other office procedures and terminology.</p> <p>Economics and <u>Accounting</u>: Knowledge of economic and accounting principles and practices, and the analysis and reporting of financial data.</p> <p>Customer and Personal Service: Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.</p> <p>Documenting Information: Recording and storing information in written or electronic/magnetic form.</p>			
Special Notations			
<p>Oral <u>Comprehension</u>: The ability to listen to and understand information and ideas presented through spoken words and sentences. Oral <u>Expression</u>: The ability to communicate information and ideas in speaking so others will understand. Written <u>Expression</u>: The ability to read and understand information and ideas presented in writing. Near Vision: The ability to see details at close range (within a few feet of the object being reviewed). Inductive - <u>Reasoning</u>: The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events)</p>			

SOC Code	11-3051	O*Net Code	11-3051.00
Industry Occupational Titles			
<p>Industrial Production Managers - Drilling Superintendent</p> <p>Other Reportable Titles:</p> <p>Production Manager - Production Supervisor - Plant Manager - General Production Manager</p> <p>Production Control Manager - Production Supervisor</p> <p>Area Plant Manager</p>			
Industry's Workforce Skills Requirements			
<p>O*Net/General <u>Industry Job Description</u>: Plan, direct, or coordinate the work activities and resources necessary for the production of oil and gas products in accordance with cost, quality, and quantity specifications.</p> <p>Education: This occupation may require a high school education or a GED Certificate; also, most occupations in this work zone may require training in vocational schools, related on-the-job experience, or an associate's degree; or, in some cases; a bachelor's degree.</p> <p><u>Knowledge: Mathematics</u>: Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.</p> <p><u>Knowledge: Mechanical</u>: Knowledge of machines and tools, including their designs, uses, repair and maintenance.</p> <p>Production and <u>Processing</u>: Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective production and distribution of oil and gas products.</p> <p><u>Education and Training</u>: Knowledge of principles and methods for training and teaching of individuals and groups, and to measure the effects of that training.</p> <p>Administration and <u>Management</u>: Knowledge of business and management principles involved in strategic planning, resource allocation, human resource modeling, leadership technique, production methods, and coordination of people and resources.</p>			
Special Notations			
<p><u>Communicating with Supervisors, Peers, or Subordinates</u>: Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. <u>Coordinating</u> the work and activities of others: Getting members of a group together to accomplish tasks. <u>Guiding, Directing,</u> and <u>Motivating</u> Subordinates: Providing guidance and direction to subordinates, including setting performance standards and monitoring performance. <u>Organizing, Planning,</u> and <u>Prioritizing</u> Work: Developing specific goals and plans to prioritize, organize, and accomplish work.</p>			

SOC Code	47-1011	O*Net Code	47-1011.00
Industry Occupational Titles			
<p>First- Line Supervisors/Managers of Construction and Extraction Workers:</p> <p>Other Reportable Titles:</p> <p>Construction Manager - Operations Manager - Construction Foreman - Construction Superintendent</p> <p>Field Operations Supervisor - Project Manager - Rig Manager - Pushers - Job Foreman</p> <p>General Foreman</p>			
Industry's Workforce Skills Requirements			
<p>O*Net/General Industry Job Description:</p> <p>Directly supervise and coordinate activities of construction or extraction workers.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; vocational school training, related on-the-job experience; or, in some cases; an associate's degree.</p> <p><u>Knowledge: Mathematics:</u> Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.</p> <p><u>Knowledge: Mechanical:</u> Knowledge of machines and tools, including their designs, uses, repair and maintenance.</p> <p><u>Engineering and Technology:</u> Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.</p> <p><u>Public Safety and Security:</u> Knowledge of relative equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.</p> <p><u>Administration and Management:</u> Knowledge of business and management principles involved in strategic planning, resource allocation, human resource modeling, leadership technique, production methods, and coordination of people and resources.</p>			
Special Notations			
<p><u>Information Ordering:</u> The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules. <u>Deductive Reasoning:</u> The ability to apply general rules to specific problems to produce answers that make sense. <u>Inductive Reasoning:</u> The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). <u>Oral Expression:</u> The ability to communicate information and ideas in speaking so others will understand.</p>			

SOC Code	47-5099	O*Net Code	47-5099.00
Industry Occupational Titles			
<p>Extraction Worker:</p> <p>Other Reportable Titles:</p> <p>Driller Helper - Maintainer - Blasting Helper</p> <p>Long Wall Machine Operator Helper</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/ General Industry Job Description:</u></p> <p>Help extraction craft workers, such as earth drillers, blasters and explosive workers, fractionation workers, derrick operators, machine, and machinery operators by performing duties of lesser skills. Duties also include supplying and moving equipment and/or cleaning and maintaining work areas.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; some short term "hands - on" vocational training.</p> <p><u>Knowledge:</u> Mechanical: Knowledge of machines and tools; including their design, uses, repair and maintenance.</p> <p><u>Public Safety and Security:</u> Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local state, or national security operations for the protection of people, data, property and institutions.</p> <p><u>Operation Monitoring:</u> Watching gauges, dials, or other indicators to make sure a machine is working properly.</p> <p><u>Equipment Maintenance:</u> Performing routine type of maintenance on equipment and determining when and what kind of maintenance is needed.</p> <p><u>Operating Vehicles, Mechanized devices, or equipment:</u> Running, maneuvering, navigating, or driving vehicles or mechanized equipment; such as, forklifts, front-end loaders; and pickup trucks.</p>			
Special Notations			
<p><u>Manual Dexterity:</u> The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects. <u>Far Vision:</u> The ability to see details at a distance. <u>Near Vision:</u> The ability to see details at close range. <u>Problem Sensitivity:</u> The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem. <u>Reaction Time:</u> The ability to quickly respond (with the hand, finger, or foot) to a signal (sound, light, picture) when it appears; and, to do so; with controlled precision.</p>			

SOC Code	53-3032	O*Net Code	53-3032.00
Industry Occupational Titles			
<p>Truck Driver:</p> <p>Other Reportable Titles:</p> <p>Over the Road Driver (OTR Driver), Line Haul Driver, Delivery Driver</p> <p>Owner Operating Driver, Flatbed Truck Driver</p> <p>Pick Up and Delivery Driver (P & D Driver)</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Drive a tractor-trailer combination or a truck with a capacity of at least 26 GVW, to transport and deliver goods or materials in liquid, loose, or packaged form. May be required to unload truck. May require use of automated routing equipment. In most instances a commercial driver's license (CDL) may be required.</p> <p><u>Education:</u> This occupation may require a high school education or a GED Certificate: or, in most cases; some short term (CDL) "hands- on" vocational training.</p> <p><u>Transportation:</u> Knowledge of principles and methods for moving liquids, fuels, chemicals, and other goods by roads, including knowledge their costs and benefits.</p> <p><u>Public Safety and Security:</u> Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.</p> <p><u>Law and Government:</u> Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process as related to the trucking industry.</p> <p><u>Route navigation</u> software: such; as, ALK Technologies- PC*Miller - Marco Soft Quo Vadis</p> <p><u>Global positioning system receivers:</u> Global positioning system GPS devices.</p>			
Special Notations			
<p><u>Control Precision:</u> The ability to quickly and repeatedly adjust the controls of a vehicle to exact positions. <u>Far Vision:</u> The ability to see details at a distance. <u>Near Vision:</u> The ability to see details at close range. <u>Depth Perception:</u> The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. <u>Response Orientation:</u> the ability to choose quickly between two or more movements in response to two or more different signals. <u>Spatial Orientation:</u> The ability to know your location in relation to the environment you're in.</p>			

SOC Code	11-1021	O*Net Code	11-1021.00
Industry Occupational Titles			
<p>Operations Manager - Director of Pipeline Operation - Asset Manager</p> <p>Area Manager - General Manager (GM) - Base Manager - Refinery Manager</p> <p>HSE Manager - Human Resources Manager - Yard Manager</p> <p>Other reportable titles:</p> <p>Plant Manager - Facilities Manager - Chief Operating Officer (COO)</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Plan, direct, or coordinate the operations of companies or private sector organizations. Duties and responsibilities including formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in anyone functional area of management or administration, such as personnel, purchasing, or administrative services. Includes owners and managers who head small business establishments whose duties are primarily managerial.</p> <p><u>Administration and Management:</u> Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.</p> <p><u>Knowledge: Mathematics:</u> Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.</p> <p><u>Economics and Accounting:</u> Knowledge of economic and accounting principles and practices; such, as; the analysis and reporting of financial data.</p> <p><u>Computers and Electronics:</u> Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.</p> <p><u>Education:</u> Most of these occupations require an associate's degree or a bachelor's degree; but, in some cases vocational training and extensive work related on-the-job training is acceptable.</p>			
Special Notations			
<p><u>Critical Thinking:</u> Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems. <u>Active Learning:</u> Understanding the implications of new information for both current and future problem-solving and decision-making. <u>Active Listening:</u> Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times. <u>Complex Problem Solving:</u> Identifying complex problems and reviewing information to develop and implement solutions.</p>			

SOC Code	49-9051	O*Net Code	49-9051.00
Industry Occupational Titles			
<p>Electrical Powerline Installers and Repairers:</p> <p>Other Reportable Titles:</p> <p>Lineman -Journeyman Lineman</p> <p>Electrical Lineworker - Lineworker</p> <p>Power Lineman</p>			
Industry's Workforce Skills Requirements			
<p>O*Net/General <u>Industry Job Description</u>: Install or repair cables or wires used in electrical power or distribution systems. May erect poles or heavy duty transmission towers.</p> <p>Education: This Occupation may require a high school education or a GED Certificate; also, most occupations in this work zone may require training in vocational schools, related on-the-job experience, or an associate's degree.</p> <p>Job <u>Training</u>: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.</p> <p><u>Knowledge</u>: Mechanical: Knowledge of machines and tools, including their designs, uses, repair and maintenance; especially, as to their use; in the repair of cables, wires, and poles; and/or; light or heavy duty transmission towers utilized in electrical power systems or distribution systems.</p> <p>Public <u>Safety</u> and <u>Security</u>: Knowledge of relative equipment, policies, procedures, and strategies to promote effective, local, state, or national security operations for the protection of people, data, property, and institutions.</p> <p>Informational: Communications: Be able to competently handle electronic communications; especially, as related to electronic mail software, data based software, spreadsheet software, word processing software, and inventory management software.</p>			
Special Notations			
<p><u>Physical- Attributes</u>: Persons in this occupation must be capable of <u>Multi-limb Coordination</u>, <u>Static Strength</u>, <u>Near Vision</u> and <u>Far Vision</u> capabilities, as well as, <u>Endurance</u>; of long hours, and, exposure to harsh weather conditions; and, be willing; to undergo periodic and/or mandated drug testing.</p> <p><u>Wear Protective and Safety Equipment</u>; such as safety shoes, glasses, gloves and hard hats. <u>Exposed to High Places</u>: Persons in this occupation are often subject to working outdoors, and, exposed to high places from which to perform difficult tasks.</p>			

SOC Code	47-5071	O*Net Code	47-5071
Industry Occupational Titles			
<p>Roustabouts - Floor Hands, Oil and Gas:</p> <p>Other Reportable Titles:</p> <p>Roustabout Pusher - Roustabout Hand - Oil Field Roustabout</p> <p>Roustabout Crew Leader - Roustabout Crew Pusher - Roughneck</p>			
Industry's Workforce Skills Requirements			
<p>O*Net/ General Industry Job Description:</p> <p>Assemble or repair oil field equipment using hand and power tools. Perform other tasks as needed.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; short term "hands on" vocational training; and, in some cases; some college, but, not necessarily; an associate's degree; is desirable.</p> <p>Knowledge: Mechanical: Knowledge of machines and tools; including their design, uses, repair and maintenance.</p> <p>Production and Processing: Knowledge of oil and gas production processes, quality control, costs, and other techniques for maximizing the effective production and distribution of oil and gas products.</p> <p>Production Management Software: Enertia software; maintenance record software; including, the utilization of word processing and spreadsheet software.</p> <p>Physics: Knowledge and prediction of physical principles, laws, their inter-relationships, and applications to understanding the structure and processes of production of oil and gas products.</p> <p>Public Safety and Security: Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.</p>			
Special Notations			
<p>Control Precision: The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. Multi-limb Coordination: The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. Manual Dexterity: The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects. Problem Sensitivity: The ability to tell when something is wrong or is likely to go wrong. Near Vision: and Far Vision: The ability to see at close and far distances.</p>			

SOC Code	17-2171	O*Net Code	17-2171.00
Industry Occupational Titles			
<p>Petroleum Engineer - Production Engineer</p> <p>Facilities Engineer - Drilling Engineer - District Engineer</p> <p>Other reportable Titles:</p> <p>Operations Engineer - Completion Engine</p> <p>Drilling Manager</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Devise methods to improve oil and gas well production and determine the need for new or modified tool designs. Oversee drilling and offer technical advice to achieve economical and satisfactory progress in production.</p> <p><u>Knowledge:</u> Mathematics: Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.</p> <p><u>Physics:</u> Knowledge and predication of physical principles, laws, their interrelationships, and applications to understanding fluid, material, atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.</p> <p><u>Chemistry:</u> Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.</p> <p><u>Engineering and Technology:</u> Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various oil and gas products, and, their by-products, as well as, their distribution; and disposal of their waste products as required.</p> <p>Education: Most of these occupations require a four year bachelor's degree; and, in some cases; Master's degree.</p>			
Special Notations			
<p><u>Analytical Thinking:</u> This occupation requires analyzing information and using logic to address work-related issues and problems. <u>Achievement/Effort:</u> This job requires establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks. <u>Innovation:</u> This job requires creativity and alternative thinking to develop new ideas and answers to work-related problems. <u>Initiative:</u> This job requires a willingness to take on responsibilities and challenges. <u>Persistence:</u> This job requires persistence in the face of obstacles.</p>			

SOC Code	51-1011	O*Net Code	51-1011.00
Industry Occupational Titles			
<p>First Line Supervisor - Operations Supervisor - IE Supervisor - Forman</p> <p>Pipeline - Supervisor - Gas Plant Supervisor - Maintenance Supervisor</p> <p>Other Reportable Titles:</p> <p>Production Supervisor - Shift Supervisor - Team Leader - Production Manager</p> <p>Plant Manager - Department Manager - Converting Supervisor</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators</p> <p><u>Knowledge: Mathematics:</u> Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.</p> <p><u>Knowledge: Mechanical:</u> Knowledge of machines and tools, including their designs, uses, repair and maintenance.</p> <p><u>Production and Processing:</u> Knowledge of raw materials, production processes, quality control, costs and other techniques for maximizing the effective production and distribution of oil and gas products.</p> <p><u>Education:</u> This occupation may require a high school education or a GED Certificate; or, in some cases; vocational school training, related on-the-job experience; or, in some cases; an associate's degree.</p> <p><u>Administration and Management:</u> Knowledge of business and management principles involved in strategic planning, resource allocation, human resource modeling, leadership technique, production methods, and coordination of people and resources.</p> <p><u>Education and Training:</u> Knowledge of principles and methods for training and teaching of individuals and groups, and to measure the effects of that training.</p>			
Special Notations			
<p><u>Critical Thinking:</u> Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems. <u>Active Listening:</u> Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times. <u>Speaking:</u> Talking to others to convey information effectively. <u>Judgment and Decision Making:</u> Consider the relative costs and benefits of potential actions to choose the most appropriate one.</p>			

SOC Code	43-5071	O*Net Code	43-5071.00
Industry Occupational Titles			
Shipping/Receiving Clerk:			
Other Reportable Titles:			
Receiver Shipper - Shipping Coordinator			
Receiving Manager			
Warehouseman			
Industry's Workforce Skills Requirements			
<u>O*Net/General Industry Job Description:</u>			
Verify and keep records on incoming and outgoing shipments. Prepare items for shipment. Duties include assembling, addressing, stamping, and shipping merchandises or material; receiving, unpacking, verifying and recording incoming merchandise or material; arranging for the transportation of products.			
Education: These occupations may require a high school education or a GED Certificate; and, in some cases; some previous work-related skill, knowledge, or experience is usually needed.			
<u>Knowledge: Production and Processing:</u> Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective production of oil and gas products and their distribution.			
<u>Knowledge: Customer and Personal Service:</u> Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.			
<u>Tools and Technology:</u> Persons in these occupations must be able to know how to utilize; barcode reader equipment, electronic top loading balances, packaging vacuum equipment, radio frequency identification devices, enterprise application software, label making software, materials requirements planning logistics and supply chain software, optical character reader OCR or scanning software; as well as procurement software; and, in some cases; how to operate forklifts to load, move and unload various supplies, materials; and, possible; machines, equipment, and chemical products utilized in the oil and gas extraction and distribution industries.			
Special Notations			
<u>Performing General Physical Activities:</u> Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials. <u>communicating with supervisors, peers, or subordinates:</u> Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. <u>Estimating the Quantifiable Characteristics of Products, Events, or Information:</u> Estimating sizes, quantities; or determining time, costs, resources needed to perform a work activity.			

SOC Code	43-9061	O*Net Code	43-9061.00
Industry Occupational Titles			
<p>Office Assistant - Office Clerks - Assistant Technicians</p> <p>Production Clerk</p> <p>Other Reportable Titles:</p> <p>Administration Assistant - Administrative Assistant - Clerk - Office Manager</p> <p>Receptionist - Secretary - Customer Service Representative - Office Coordinator</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Perform duties too varied and diverse to be classified in any specific office clerical occupation, requiring limited knowledge of office management systems and procedures. Clerical duties may be assigned in accordance with the office procedures of individual establishments and may include a combination of answering telephones, bookkeeping, typing or word processing, stenography, office machine operation, and filing.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; vocational school training, related on-the-job experience; or, in some cases; a bachelor's or an associate's degree.</p> <p><u>Knowledge: Clerical:</u> Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.</p> <p><u>Knowledge: Customer and Personal Service:</u> Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, evaluation of customer satisfaction.</p> <p><u>Knowledge: English Language:</u> Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.</p> <p><u>Knowledge: Interacting With Computers:</u> Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.</p> <p><u>Knowledge: Documenting/Recording Information:</u> Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.</p>			
Special Notations			
<p><u>Performing Administrative Activities:</u> Performing day-to-day administrative tasks such as maintaining information files and processing paperwork. <u>Communicating with Persons Outside Organization:</u> Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, by telephone or e-mail. <u>Processing Information:</u> Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data. <u>Communicating with supervisors, peers, or subordinates:</u> Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</p>			

SOC Code	47-5011	O*Net Code	47-5011.00
Industry Occupational Titles			
<p>Derrick Operators, Oil and Gas:</p> <p>Other Reportable Titles:</p> <p>Derrick Hand - Derrick Man - Floor Hand</p> <p>Derrick Operator - Derrick Worker</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/ General Industry Job Description:</u></p> <p>Rig derrick equipment and operate pumps to circulate mud through drill hole.</p> <p>Education: O*Net Respondents indicated that about 69% of workers in this area have less than a high school diploma; and, approximately; 23% have a high school education and/or a GED Certificate, and 5% have some college, but no degree; however, in some cases; short term "hands on" vocational training is extremely beneficial.</p> <p><u>Knowledge: Mechanical:</u> Knowledge of machines and tools; including their design, uses, repair and maintenance.</p> <p><u>Knowledge: Mathematics:</u> Knowledge of arithmetic, algebra, geometry and their applications.</p> <p><u>Operation Monitoring:</u> Watching gauges, dials, or other indicators to make sure a machine is working.</p> <p><u>Operation and Control:</u> Controlling operations or systems.</p> <p>Active <u>Listening:</u> Giving full attention to what other people are saying, taking time to understand the points being made, asking question as appropriate, and not interrupting at inappropriate times.</p> <p>Critical <u>Thinking:</u> Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.</p> <p>Troubleshooting: Determining causes of operating errors and deciding what to do about it.</p>			
Special Notations			
<p><u>Performing General Physical Activities:</u> Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling materials. <u>Monitor Processes, Materials, or Surroundings:</u> Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems. <u>Identifying Objects, Actions and Events:</u> Identifying information by categorizing, estimating, recognizing differences or similarities and detecting changes in circumstances or events.</p>			

SOC Code	49-3031	O*Net Code	49-3031.00
Industry Occupational Titles			
<p>Bus/Truck Mechanics - Diesel Engine Specialist</p> <p>Other Reportable Titles:</p> <p>Mechanic - Diesel Mechanic - Bus Mechanic</p> <p>General Repair Mechanic - Diesel Technician</p> <p>Truck Mechanic - Fleet Mechanic - Service Technician</p>			
Industry's Workforce Skills Requirements			
<p>O*Net/General Industry Job Description:</p> <p>Diagnose, adjust, repair, or overhaul trucks, buses, and all types of diesel engines. Includes mechanics working primarily with all kinds of diesel engines.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; vocational school training, or related on-the-job experience; or, in some cases; an associate's degree.</p> <p>Knowledge: Mechanical: Knowledge of machines and tools, including their designs, uses, repair and maintenance.</p> <p>Knowledge: Mathematics: Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.</p> <p>Public Safety and Security: Knowledge of relative equipment, policies, procedures, and strategies to promote effective local, state, or national security operation for the protection of people, data, property, and institutions.</p> <p>Repairing: Repairing machines or systems using the needed tools.</p> <p>Troubleshooting: Determining causes of operating errors and deciding what to do about it.</p> <p>Equipment Maintenance: Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.</p>			
Special Notations			
<p>Performing General Physical Activities: Performing physical activities that require considerable use of your arms and legs and moving your whole body. Inspecting Equipment: Inspecting equipment to identify the cause of errors or other problems or defects. Repairing and Maintaining Mechanical Equipment: Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical principles. Getting Information: Observing, receiving, and otherwise obtaining information from all relevant sources. Updating and Using Relevant Knowledge: Keeping up-to-date technically and applying new knowledge to your job.</p>			

SOC Code	43-6014	O*Net Code	43-6014.00
Industry Occupational Titles			
<p>Secretary</p> <p>Other Reportable Titles:</p> <p>Administrative Assistant - Administrative Secretary - Office Assistant</p> <p>Clerk Typist - Office Manager - Administrative Technician</p> <p>Department Secretary - Administrative Associate - Administrative Support Assistant (ASA)</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; some short term "hands-on" vocational training.</p> <p><u>Knowledge: Clerical:</u> Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.</p> <p><u>Knowledge: Customer and Personal Service:</u> Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, evaluation of customer satisfaction.</p> <p><u>Knowledge: English Language:</u> Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.</p> <p><u>Knowledge: Computers and Electronics:</u> Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.</p> <p><u>Knowledge: Administration and Management:</u> Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods and coordination of people and resources.</p>			
Special Notations			
<p><u>Performing Administrative Activities:</u> Performing day-to-day administrative tasks such as maintaining information files and processing paperwork. <u>Documenting/Recording Information:</u> Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form. <u>Processing Information:</u> Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data. <u>Communicating with Supervisors, Peers, or Subordinates:</u> Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</p>			

SOC Code	49-9042	O*Net Code	49-9042.00
Industry Occupational Titles			
<p>Maintenance/Repair Worker - Sandblasting Tool Specialist - Field Specialist</p> <p>Pipeline Maintenance Specialist - Maintenance/Craftsman</p> <p>Other reportable titles:</p> <p>Maintenance Technician - Maintenance Mechanic - Maintenance - Engineer</p> <p>Process Technician</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment, and repairing buildings, floors, or stairs.</p> <p>Education: these occupations may require a high school education or a GED Certificate; and, in some cases; extensive vocational training, or, extensive work related on-the-job training; as, well as, in some cases; an associate's degree may also be required; or, at least some college.</p> <p><u>Knowledge:</u> Mechanical: Knowledge of machines and tools, including their designs, uses, repair, and maintenance,</p> <p><u>Knowledge:</u> Mathematics: Knowledge of arithmetic, algebra, geometry, statistics, and their applications.</p> <p><u>Equipment Maintenance:</u> Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.</p> <p><u>Repairing:</u> Repairing machines or systems using the needed tools.</p> <p><u>Complex Problem Solving:</u> Identifying complex problems and reviewing information to develop and evaluate options and implement solutions.</p>			
Special Notations			
<p><u>Problem Sensitivity:</u> The ability to tell when something is wrong or is likely to go wrong. Information <u>Ordering:</u> The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules. Multi-limb Coordination: The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. Near Vision: The ability to see details at close range. Deductive Reasoning: Applying general rules to problems.</p>			

SOC Code	51-8093	O*Net Code	51-8093.00
Industry Occupational Titles			
<p>Operator - Gauger:</p> <p>Other reportable Titles:</p> <p>Pumper - Refinery Operator - Board Operator - Stillman</p> <p>Unit Operator - Crude Unit Operator - Head Operator</p> <p>Hydrotreater Operator - Outside Operator</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Control the operation of petroleum refining or processing units. May specialize in controlling manifold and pumping systems, gauging or testing oil in storage tanks, or regulating flow into pipelines.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; shot term "hands on" vocational training; and, in some cases; and Associate Degree.</p> <p><u>Knowledge: Mechanical:</u> Knowledge of machines and tools; including designs, uses, repair, and maintenance.</p> <p><u>Knowledge: Mathematics:</u> Knowledge of arithmetic, algebra, geometry, statistics, and their applications.</p> <p><u>Public Safety and Security:</u> Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for protection of people, data, property, and institutions.</p> <p><u>Education and Training:</u> Knowledge of principles and methods for training and teaching of individuals and groups, and to measure the effects of that training</p> <p><u>Interacting With Computers:</u> Using computers and computer systems (including hardware and software) to program, set up functions, enter data or process information.</p>			
Special Notations			
<p><u>Perceptual Speed:</u> The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, or patterns. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.</p> <p><u>Information Ordering:</u> The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules. Near Vision: The ability to see details at close range. Selective Attention: The ability to concentrate on a task over a period of time without being distracted.</p>			

SOC Code	53-7071	O*Net Code	53-7071.00
Industry Occupational Titles			
Compressor Operator - Chief Operator - Pipeline Operations Operators			
Other Reportable Titles:			
Plant Operator - Compression Station Operator - Field Operator			
Filler - Liquefied Natural Gas Plant Operator (LNG Plant Operator)			
Pipeline Technician - Production Technician - Terminal Operator			
Industry's Workforce Skills Requirements			
O*Net/General Industry Job Description:			
Operate steam, gas, electrical motor or internal combustion engine drive compressors. Transmit, compress, or recover gases, such as butane, nitrogen, hydrogen, and natural gas.			
Education: This occupation may require a high school education or a GED Certificate; or, in some cases; short term "hands-on" vocational school training, related on-the-job experience; or, in some cases; an associate's degree.			
<u>Knowledge: Mathematics:</u> Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.			
<u>Knowledge: Mechanical:</u> Knowledge of machines and tools, including their designs, uses, repair and maintenance.			
<u>Engineering and Technology:</u> Knowledge of the practical application of engineering science and technology. This includes applying principals, techniques, procedures, and equipment to the design and production of various goods and services.			
<u>Public Safety and Security:</u> Knowledge of relative equipment, policies, procedures, and strategies to promote effective local, state, or national security operation for the protection of people, data, property, and institutions.			
<u>Production and Processing:</u> Knowledge of the production processing and transportation of oil and natural gas products.			
Special Notations			
<u>Monitor Processes, Materials, or Surroundings:</u> Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems. <u>Controlling Machines and Processes:</u> Using either control mechanisms or direct physical activity to operate machines or processes. <u>Communicating with Supervisors, Peers, or Subordinates:</u> Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. <u>Inspecting Equipment or Materials:</u> Inspecting equipment, or materials to identify the cause of errors or other problems or defects.			

SOC Code	51-8092	O*Net Code	51-8092.00
Industry Occupational Titles			
<p>Gas Plant Operator</p> <p>Other Reportable Titles:</p> <p>Plant Operator-Gas Dispatcher - Gas Controller - Gas System Operator</p> <p>Liquefied Natural Gas Technician (LNG) - Compressor Station Operator - Engine Room Operator</p> <p>Liquid Natural Gas Operator (LNG) Plant Operator - Liquefied Natural Gas Specialist (LNG Specialist)</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Distribute or process gas for utility companies and others by controlling compressors to maintain specified pressures on main pipelines.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; short term "hands on" vocational training; and, in some cases; an associate degree.</p> <p><u>Knowledge:</u> Mechanical: Knowledge of machines and tools; including their designs, uses, repair, and maintenance.</p> <p>Production and <u>Processing:</u> Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the distribution of the natural gas product.</p> <p>Public <u>Safety</u> and <u>Security:</u> Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for protection of people, data, property, and institutions.</p> <p>Education and <u>Training:</u> Knowledge of principles and methods for training and teaching of individuals and groups, and to measure the effects of that training</p> <p><u>Interacting with Computers:</u> Using computers and computer systems (including hardware and software) to program, set up functions, enter data or process information.</p>			
Special Notations			
<p><u>Perceptual Speed:</u> The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, or patterns. The things to be compared may be presented at the same time or one after the other. Problem <u>Sensitivity:</u> The ability to tell when something is wrong or likely to go wrong. Near Vision: The ability to see details at close range. <u>Operation</u> and Control: Controlling operations of systems. Selective Attention: The ability to concentrate on a task over a period of time without being distracted.</p>			

SOC Code	43-6011	O*Net Code	43-6011.00
Industry Occupational Titles			
<p>Executive Assistant - Administrative Assistant - District Secretary</p> <p>Other Reportable Titles:</p> <p>Executive Secretary - Administrative Secretary - Office Manager</p> <p>Administrative Coordinator - Administrative Aide - Administrative Associate</p> <p>Executive Administrative Assistant - Secretary</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Provide high-level administrative support by conducting research, preparing statistical reports, handling information requests, and performing clerical functions such as preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings. May also train and supervise lower-level clerical staff.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; vocational school training, related on-the-job experience; or, in some cases; an associate's degree.</p> <p><u>Knowledge: Clerical:</u> Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.</p> <p><u>Knowledge: English Language:</u> Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.</p> <p><u>Knowledge: Customer and Personal Service:</u> Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, evaluation of customer satisfaction.</p> <p><u>Knowledge: Computers and Electronics:</u> Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.</p> <p><u>Knowledge: Administration and Management:</u> Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.</p>			
Special Notations			
<p><u>Performing Administrative Activities:</u> Performing day-to-day administrative tasks such as maintaining information files and processing paperwork. <u>Communicating with Supervisors, Peers, or Subordinates:</u> Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. <u>Organizing, Planning and Prioritizing Work:</u> Developing specific goals and plans to prioritize, organize, and accomplish your work. <u>Documenting/Recording Information:</u> Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.</p>			

SOC Code	49-1011	O*Net Code	49-1011.00
Industry Occupational Titles			
<p>Manager of Mechanics - First Line Supervisor - Maintenance Supervisor</p> <p>Coordinator - Area Supervisor</p> <p>Other Reportable Titles:</p> <p>Maintenance Foreman - Maintenance Manager - Production Crew Supervisor - Service Manager</p> <p>Crew Leader - Facility Maintenance Supervisor - Maintenance Planner</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Supervise and coordinate the activities of mechanics, installers, and repairers.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; short term "hands-on" vocational school training, related on-the-job experience; or, in some cases; an associate's degree.</p> <p><u>Knowledge:</u> Mathematics: Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.</p> <p><u>Knowledge:</u> Mechanical: Knowledge of machines and tools, including their designs, uses, repair and maintenance.</p> <p><u>Administrative and Management:</u> Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.</p> <p><u>Public Safety and Security:</u> Knowledge of relative equipment, policies, procedures, and strategies to promote effective local, state, or national security operation for the protection of people, data, property, and institutions.</p> <p><u>Education and Training:</u> Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.</p>			
Special Notations			
<p><u>Inspecting Equipment, Structures, or Materials:</u> Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects. <u>Identifying objects, actions, and events:</u> Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstance or events. <u>Coordinating the Work and activities of Others:</u> Getting members of a group to work together to accomplish tasks. <u>Communicating with Supervisors, Peers, or Subordinates:</u> Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</p>			

SOC Code	11-9199	O*Net Code	11-9199.00
Industry Occupational Titles			
<p>Manager (Tool Pusher) Production Superintendent Production Supervisor Land Supervisor Drilling Superintendent Drilling Supervisor Rig Manager Plant Manager Quality Manager</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u> Direct, or coordinate production, purchasing, warehousing, distribution, or financial forecasting services and activities to limit costs and improve accuracy, customer service and safety. Examine existing procedures and opportunities for streamlining activities to meet production and distribution needs. Direct the movement, storage, and processing of equipment and resources.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; short term "hands-on" vocational school training, related on-the-job experience; but in most cases; a bachelor's or an associate's degree.</p> <p><u>Knowledge: Mathematics:</u> Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.</p> <p><u>Knowledge: Mechanical:</u> Knowledge of machines and tools, including their designs, uses, repair and maintenance.</p> <p><u>Computers and Electronics:</u> Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.</p> <p>Production and <u>Processing:</u> Knowledge of oil and natural gas production processes, quality control, costs, and other techniques for maximizing effective and efficient product production.</p>			
Special Notations			
<p><u>Processing Information:</u> Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data. <u>Organizing, Planning, and Prioritizing Work:</u> Developing constructive and cooperative working relationships with others, and maintaining them over time. <u>Communicating with Supervisors, Peers, or Subordinates:</u> Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. <u>Making Decisions and Solving Problems:</u> Analyzing information and evaluating results to choose the best solution and solve problems.</p>			

SOC Code	47-5081	-	O*Net Code	47-5081.00
Industry Occupational Titles				
<p>Motor Man - Helpers - Extraction Workers</p> <p>Other Reportable Titles:</p> <p>Drillers Helpers - Maintainer</p> <p>Blasting Helper - Longwall Machine Operator Helper</p>				
Industry's Workforce Skills Requirements				
<p><u>O*Net/General Industry Job Description:</u></p> <p>Help extraction craft workers, such as earth drillers, blasters and explosive workers, derrick operators, and mining machine operators, by performing duties of lesser skill. Duties include supplying equipment or cleaning work area.</p> <p>Education: This occupation may require a high school education or a GED Certificate; or, in some cases; short term "hands-on" vocational school training, or, in some cases; on-the-job work related training.</p> <p><u>Knowledge:</u> Mechanical: Knowledge of machines and tools, including their designs, uses, repair and maintenance.</p> <p><u>Public Safety and Security:</u> Knowledge of relative equipment, policies, procedures, and strategies to promote effective local, state, or national security operation for the protection of people, data, property, and institutions.</p> <p><u>Equipment Maintenance:</u> Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.</p> <p><u>Repairing:</u> Repairing machines or systems using the needed tools.</p> <p><u>Active Listening:</u> Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.</p>				
Special Notations				
<p><u>Manual Dexterity:</u> The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects. <u>Multi-limb Coordination:</u> The ability to coordinate two or more limbs while sitting standing, or lying down. <u>Far Vision:</u> The ability to see details at a distance. <u>Near Vision:</u> The ability to see details at close range (within a few feet of the observer). <u>Finger Dexterity:</u> The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.</p>				

SOC Code	53-7073	O*Net Code	53-7073.00
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Industry Occupational Titles

Lead Pumper- Field Operator- Production Foreman

Other Reportable Titles:

Pumper - Lease Operator - Well Tender - Operations Technician

Wellhead Pumper - Oilfield Plant and Field Operator - Production Operator

Multi-Skilled Operator - Well Head Pumper - Gauger

Industry's Workforce Skills Requirements

O*Net/General Industry Job Description:

Operate power pumps and auxiliary equipment to produce flow of oil or gas from wells in the oil field.

Education: This occupation may require a high school education or a GED Certificate, short term "hands-on" vocational school training, or, in some cases, on-the-job work related training.

Knowledge: Mathematics: Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.

Knowledge: Mechanical: Knowledge of machines and tools, including their designs, uses, repair and maintenance.

Production and Processing: Knowledge of the oil and natural gas production processing and transportation of oil and natural gas products.

Public Safety and Security: Knowledge of relative equipment, policies, procedures, and strategies to promote effective local, state, or national security operation for the protection of people, data, property, and institutions.

Operation Monitoring: Watching gauges, dials, or other indicators to make sure a machine is working properly.

Operation and Control: Controlling operations of equipment or systems.

Critical Thinking: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Special Notations

Performing General Physical Activities: Performing physical activities that require considerable use of your arms and legs and moving your whole body. **Documenting/Recording Information:** Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.

Inspecting Equipment or Materials: Inspecting equipment, or materials to identify the cause of errors or other problems or defects. **Controlling Machines and Processes:** Using either control mechanisms or direct physical activity to operate machines or processes.

SOC Code	47-2111	O'Net Code	47-2111.00
Industry Occupational Titles			
<p>Electrician</p> <p>Other Reportable Titles:</p> <p>Maintenance Electrician - Journeyman Electrician -Inside Wireman</p> <p>Control Electrician - Electrician Technician - Industrial Electrician</p> <p>Journeyman - Wireman</p>			
Industry's Workforce Skills Requirements			
<p><u>O*Net/General Industry Job Description:</u></p> <p>Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems.</p> <p>Education: This occupation may require a high school education or a GED Certificate, "hands-on" vocational school training, or, in some cases, on-the-job work related training.</p> <p><u>Knowledge:</u> Mathematics: Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their application.</p> <p><u>Knowledge:</u> Mechanical: Knowledge of machines and tools, including their designs, uses, repair and maintenance.</p> <p><u>Physics:</u> Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.</p> <p><u>Public Safety and Security:</u> Knowledge of relative equipment, policies, procedures, and strategies to promote effective local, state, or national security operation for the protection of people, data, property, and institutions.</p> <p><u>Operation Monitoring:</u> Watching gauges, dials, or other indicators to make sure a machine is working properly.</p> <p>Telecommunications: Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.</p>			
Special Notations			
<p>Multi-limb Coordination: The ability to coordinate two or more limbs while sitting, standing, or lying down. Manual <u>Dexterity:</u> The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects. Information <u>Ordering:</u> The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules. Problem <u>Sensitivity:</u> The ability to tell when something is wrong or is likely to go wrong. Inductive <u>Reasoning:</u> The ability to combine pieces of information to form general rules or conclusions.</p>			

SOC Code	49-3042	O*Net Code	49-3042.00
Industry Occupational Titles			
Mobile Heavy Equipment Mechanics			
Industry's Workforce Skills Requirements			
O*Net/General Industry Job Description			
<p>Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and surface mining.</p> <p><u>Knowledge:</u></p> <p>Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.</p> <p>Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.</p> <p>Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.</p> <p><u>Tools and Technology:</u></p> <p>Knowledge of use of standard mechanical tools including pliers, wrenches, spark plug gapping tools, hammers. Technology including database software, maintenance management software and record keeping software.</p>			
Special Notations			
<p>Control Precision — The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.</p> <p>Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.</p> <p>Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.</p> <p>Finger Dexterity — The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.</p>			