

Qualification Pack



Floor hand / Roughneck - Drilling Rig

QP Code: HYC/Q 0103

NSQF Level: 4

Hydrocarbon Sector Skill Council
Second Floor - OIB Bhawan,
Tower C, Plot No. 2, Vikas Marg, Sector - 73,
Noida, Uttar Pradesh - 201301

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HYC/Q0103 Floor hand / Roughneck – Drilling Rig

Brief Job Description

The Individual at this job is responsible to pipe in well bore, perform general work around the rig, assist crew members in drilling operation at drilling rig. The person at this job closely works with roustabouts, derrick hands, crew pusher, etc. and assist them in preparatory, operational and maintenance work.

Personal Attributes

The individual should have good sense of responsibility, a good organizer and time keeper. The person should have the ability to perform physical/hard work individually or in a team.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. HYC/N0103 Perform and assist in operational and maintenance activity at drilling rig
2. HYC/N9301 Working effectively in a team
3. HYC/N9302 Maintain health, safety and security procedures

Qualification Pack (QP) Parameters

| | |
|--|---|
| Sector | Hydrocarbon |
| Sub-Sector | Upstream |
| Occupation | Exploration & Production |
| Country | India |
| NSQF Level | 3 |
| Aligned to NCO/ISCO/ISIC Code | NCO/ 2015.8113 |
| Minimum Educational Qualification & Experience | Completed 2nd year of the 3-year Diploma (after 10th) in engineering trade OR 10th Grade Pass plus 2-year of National Trade Certificate (NTC) in engineering trade OR 12th Grade Pass |
| Minimum Level of Education for Training in Pre-Requisite License or Training | NA |
| Minimum Job Entry Age | 18 years |
| Last Reviewed On | 3-May-2023 |
| Next Review Date | 2-May-2026 |
| NSQC Approval Date | 3-May-2023 |
| Version | 1.0 |

HYC/N0103 Perform and assist in operational and maintenance activity at drilling rig

Description

This unit is about assisting crew members, derrick operators, drillers, pumpers, welders, electricians and mechanics tool pusher or rig manager at drill rig for different operational and maintenance activity.

Scope

This unit/task covers the following:

- Prepare for operational and maintenance activities
- Perform operational and maintenance activities

Elements and Performance Criteria

Prepare for operational and maintenance activities

To be competent, the user/individual on the job must be able to;

- PC1. check readiness of the drilling equipment and valves
- PC2. clean and maintain drilling equipment and keep the drilling area clear
- PC3. perform general maintenance and safety check to ensure proper functioning of the drilling equipment valves
- PC4. coordinate with technician for repair of faulty equipment, valves, pumps, etc.
- PC5. assist in setting up, maintain, disassemble and transport rig floor equipment
- PC6. lubricate and inspect the elevator latch and elevator hinge pin before use
- PC7. report malfunctioning of equipment to supervisor/manager

Perform operational and maintenance activities

To be competent, the user/individual on the job must be able to;

- PC8. assist crew in picking up and laying down drill pipe, drill collars, tubing, casing, cementing and other Bottom Hole Assembly (BHA)
- PC9. assist derrick operators, drillers, pumpers, welders, electricians and mechanics in rig operation
- PC10. assist crew in moving, adjusting, making drilling connections and recalibrating tools, equipment and machinery
- PC11. assist crew members in mixing chemical
- PC12. perform the role of derrick as and when needed
- PC13. remove debris and waste from the work site
- PC14. assist crew members in case of emergency

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. the basic principle of rig operation
- KU2. standard operating procedures for rig operation
- KU3. importance of maintaining clean workplace
- KU4. potential hazards, risks and threats based on the nature of work
- KU5. relevant health and safety requirements applicable to the work place

- KU6. the importance of personal protective equipment used during rig operation
- KU7. ways of efficiently managing material and water in the process
- KU8. the difference between recyclable/reusable and waste material

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1. read and interpret operational instructions
- GS2. assess complexity and criticality of task
- GS3. make timely decisions for efficient utilization of resources
- GS4. complete tasks efficiently and accurately within stipulated time
- GS5. work with supervisors/team members to carry out work related tasks
- GS6. communicate effectively with team members
- GS7. perform basic mathematical calculation
- GS8. plan and organize the marketing activity

Assessment Criteria

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--|--------------|-----------------|---------------|------------|
| PC1. check readiness of the drilling equipment and valves | 1 | 2 | | |
| PC2. clean and maintain drilling equipment and keep the drilling area clear | 2 | 2 | | |
| PC3. perform general maintenance and safety check to ensure proper functioning of the drilling equipment valves | 1 | 3 | | |
| PC4. coordinate with technician for repair of faulty equipment, valves, pumps, etc. | 2 | 2 | | |
| PC5. assist in setting up, maintain, disassemble and transport rig floor equipment | 1 | 2 | | |
| PC6. lubricate and inspect the elevator latch and elevator hinge pin before use | 2 | 2 | | |
| PC7. report malfunctioning of equipment to supervisor/manager | 1 | 2 | | |
| PC8. assist crew in picking up and laying down drill pipe, drill collars, tubing, casing, cementing and other Bottom Hole Assembly (BHA) | 2 | 3 | | |
| PC9. assist derrick operators, drillers, pumpers, welders, electricians and mechanics in rig operation | 1 | 2 | | |
| PC10. assist crew in moving, adjusting, making drilling connections and recalibrating tools, equipment and machinery | 1 | 2 | | |
| PC11. assist crew member in mixing chemical | 2 | 2 | | |
| PC12. perform role of derrick as and when needed | 1 | 2 | | |
| PC13. remove debris and waste from the work site | 2 | 2 | | |
| PC14. assist crew member in case of emergency | 1 | 2 | | |
| NOS Total | 20 | 30 | - | - |

National Occupational Standards (NOS) Parameters

| | |
|----------------------------|--|
| NOS Code | HYC/N 0103 |
| NOS Name | Perform and assist in operational and maintenance activity at drilling rig |
| Sector | Hydrocarbon |
| Sub-Sector | Upstream |
| Occupation | Exploration & Production |
| NSQF Level | 4 |
| Credits | 7 |
| Version | 1.0 |
| Last Reviewed Date | 3-May-2023 |
| Next Review Date | 2-May-2026 |
| NSQC Clearance Date | 3-May-2023 |

HYC/N9301 Working effectively in a team

Description

This unit covers basic practices that improve effectiveness of working in a team in an organizational set-up

Scope

This unit/task covers the following:

- Effective team work

Elements and Performance Criteria

Effective team work

To be competent, the user/individual on the job must be able to:

- PC1. maintain clear communication with colleagues
- PC2. pass on information to colleagues in line with organizational requirements
- PC3. work in a team and support the team members
- PC4. work in ways that show respect to colleagues
- PC5. fulfil commitments made to colleagues
- PC6. inform team members timely, if timelines can't be met
- PC7. take the necessary initiatives to resolve the issues while working in team

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. the organization's policies and procedures related to team work in workplace
- KU2. the importance of effective communication and establishing good working relationships with colleagues
- KU3. Knowledge of gender concepts, issues & legislation
- KU4. the importance of creating an environment of trust and mutual respect
- KU5. the implications of own work on the work and schedule of others
- KU6. the standard practice in organization w.r.t communication at various levels
- KU7. the instructions at individual level or at group level
- KU8. individual work responsibility and corrective measures required to complete task in time
- KU9. the importance of personal qualities like discipline and confidence to achieve success in work assigned
- KU10. Deeper understanding of actions & consequences of gendered behaviour Knowledge of gender concepts, issues & legislation

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1. communicate effectively in writing
- GS2. read instructions, guidelines/procedures
- GS3. communicate information effectively

- GS4. make decisions on a suitable course of action or response keeping in view resource utilization while meeting commitments
- GS5. how to plan the work to meet the deadline
- GS6. the importance of consistent and reliable services for customer satisfaction
- GS7. apply problem solving approaches in different situations
- GS8. apply balanced judgments to different situations

Assessment Criteria

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--|--------------|-----------------|---------------|------------|
| <i>Effective teamwork</i> | 20 | 30 | | |
| PC1. maintain clear communication with colleagues | 2 | 4 | - | - |
| PC2. pass on information to colleagues in line with organisational requirements | 3 | 5 | - | - |
| PC3. work in a team and support the team members | 3 | 4 | - | - |
| PC4. work in ways that show respect to colleagues | 3 | 4 | - | - |
| PC5. fulfil commitments made to colleagues | 3 | 5 | - | - |
| PC6. inform team members timely, if timelines can't be met | 3 | 4 | - | - |
| PC7. take the necessary initiatives to resolve the issues while working in team | 3 | 4 | - | - |
| NOS Total | 20 | 30 | - | - |

National Occupational Standards (NOS) Parameters

| | |
|----------------------------|-------------------------------|
| NOS Code | HYC/N9301 |
| NOS Name | Working effectively in a team |
| Sector | Hydrocarbon |
| Sub-Sector | Generic |
| Occupation | Generic |
| NSQF Level | 4 |
| Credits | 3 |
| Version | 3.0 |
| Last Reviewed Date | 3-May-2023 |
| Next Review Date | 2-May-2026 |
| NSQC Clearance Date | 3-May-2023 |

HYC/N9302: Maintain health, safety and security procedures

Description

This unit covers maintaining health, safety and security procedures at the workplace. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment

Scope

This unit/task covers the following:

- Practice health and safety measures
- Follow fire safety procedures
- Follow emergencies, rescue and first-aid procedures

Elements and Performance Criteria

Practice health and safety measures

To be competent, the user/individual on the job must be able to:

- PC1.** use protective clothing/equipment for specific tasks and work conditions
- PC2.** identify documents, location and people responsible for health and safety in the workplace
- PC3.** identify possible causes of risk or accident in the workplace
- PC4.** carry out safe working practices while dealing with hazards to ensure the safety of self and others
- PC5.** lift heavy objects safely using correct procedures
- PC6.** identify common safety signs, displayed in various areas

Follow fire safety procedures

To be competent, the user/individual on the job must be able to:

- PC7.** use the various appropriate fire extinguishers on different types of fires correctly
- PC8.** follow rescue techniques applied during fire hazard
- PC9.** follow good housekeeping practice in order to prevent fire hazards
- PC10.** list issues concerning the safety in work place
- PC11.** inform fire safety department about any near-miss incidents in the work place
- PC12.** follow the applicable laws, regulations and codes as per safety standard
- PC13.** prepare written accident/incident report and share with the concerned officer/department

Follow emergencies, rescue and first-aid procedures

To be competent, the user/individual on the job must be able to:

- PC14.** provide appropriate first aid to victims in emergency situation
- PC15.** demonstrate basic techniques of bandaging
- PC16.** respond promptly and appropriately to an accident
- PC17.** perform rescue activity during an accident in real or simulated environments
- PC18.** demonstrate correct method to rescue injured people and others during an emergency

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. company's policies on personnel management and duty reporting procedure
- KU2. reporting structure within organization
- KU3. how to escalate problem
- KU4. concept of "hazards" and "risks"
- KU5. health and safety hazards commonly affecting the work environment and related precautions
- KU6. preventative and remedial actions to be taken in the case of exposure to toxic materials
- KU7. importance of using protective clothing/equipment while working
- KU8. various causes of fire
- KU9. techniques of using different types of fire extinguishers
- KU10. different materials used for extinguishing fire
- KU11. various types of safety signs and their significance

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1. communicate by writing
- GS2. read instructions, guidelines/procedures and reports
- GS3. communicate effectively and share the information efficiently
- GS4. identify and report potential sources of danger
- GS5. how to plan the work to meet the deadline
- GS6. the importance of on time services
- GS7. apply problem solving approaches in different situations
- GS8. apply balanced judgments to different situations

Assessment Criteria

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|---|--------------|-----------------|---------------|------------|
| <i>Practice health and safety measures</i> | 9 | 15 | | |
| PC1. use protective clothing/equipment for specific tasks and work conditions | 1 | 4 | - | - |
| PC2. identify documents, location and people responsible for health and safety in the workplace | 2 | 1 | - | - |
| PC3. identify possible causes of risk or accident in the workplace | 1 | 3 | - | - |
| PC4. carry out safe working practices while dealing with hazards to ensure the safety of self and others | 2 | 2 | - | - |
| PC5. lift heavy objects safely using correct procedures | 1 | 3 | - | - |
| PC6. identify common safety signs, displayed in various areas | 2 | 2 | - | - |
| <i>Follow fire safety procedures</i> | 12 | 16 | | |
| PC7. use the various appropriate fire extinguishers on different types of fires correctly | 2 | 2 | - | - |
| PC8. follow rescue techniques applied during fire hazard | 2 | 2 | - | - |
| PC9. follow good housekeeping practice in order to prevent fire hazards | 2 | 2 | - | - |
| PC10. list issues concerning the safety in work place | 1 | 3 | - | - |
| PC11. inform fire safety department about any near-miss incidents in the work place | 2 | 2 | - | - |
| PC12. follow the applicable laws, regulations and codes as per safety standard | 1 | 3 | - | - |
| PC13. prepare written accident/incident report and share with the concerned officer/department | 2 | 2 | - | - |
| <i>Follow emergencies, rescue and first-aid procedures</i> | 4 | 19 | | |
| PC14. provide appropriate first aid to victims in emergency situation | 1 | 4 | - | - |

Qualification Pack

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|---|-----------|-----------|---|---|
| PC15. demonstrate basic techniques of bandaging | 1 | 4 | - | - |
| PC16. respond promptly and appropriately to an accident | 0 | 3 | - | - |
| PC17. perform rescue activity during an accident in real or simulated environments | 1 | 4 | - | - |
| PC18. demonstrate correct method to rescue injured people and others during an emergency | 1 | 4 | - | - |
| NOS Total | 25 | 50 | | |

National Occupational Standards (NOS) Parameters

| | |
|----------------------------|---|
| NOS Code | HYC/N9302 |
| NOS Name | Maintain health, safety and security procedures |
| Sector | Hydrocarbon |
| Sub-Sector | Generic |
| Occupation | Generic |
| NSQF Level | 4 |
| Credits | 3 |
| Version | 3.0 |
| Last Reviewed Date | 3-May-2023 |
| Next Review Date | 2-May-2026 |
| NSQC Clearance Date | 3-May-2023 |

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on the knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training centre (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training centre based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Recommended Pass % aggregate for QP: 70

Assessment Weightage

Compulsory NOS

| National Occupational Standards | Theory Marks | Practical Marks | Project Marks | Viva Marks | Total Marks | Weightage |
|---|--------------|-----------------|---------------|------------|-------------|------------|
| HYC/N 0103 Perform and assist in operational and maintenance activity at drilling rig | 20 | 30 | - | - | 50 | 60 |
| HYC/N9301 Working effectively in a team | 20 | 30 | - | - | 50 | 20 |
| HYC/N9302 Maintain health, safety and security procedures | 25 | 50 | | | 75 | 20 |
| Total | 65 | 110 | - | - | 175 | 100 |

Acronyms

NOS – National Occupational Standard(s)

OS – Occupational Standard(s)

NSQF – National Skills Qualifications Framework

QP – Qualifications Pack

KU – Knowledge and Understanding

GS – Generic Skills

SOP- Standard operating procedure

Glossary

| | |
|--|--|
| Sector | Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests. |
| Sub-sector | Sub-sector is derived from a further breakdown based on the characteristics and interests of its components. |
| Occupation | Occupation is a set of job roles, which perform similar/ related set of functions in an industry. |
| Job role | Job role defines a unique set of functions that together form a unique employment opportunity in an organisation. |
| Occupational Standards (OS) | OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts. |
| Performance Criteria (PC) | Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task. |
| National Occupational Standards (NOS) | NOS are occupational standards which apply uniquely in the Indian context. |
| Qualifications Pack (QP) | QP comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code. |
| Unit Code | Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N' |
| Unit Title | Unit title gives a clear overall statement about what the incumbent should be able to do. |
| Description | Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for. |
| Scope | Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required. |

| | |
|--|---|
| <p>Knowledge and Understanding (KU)</p> | <p>Knowledge and Understanding (KU) are statements that together specify the technical, generic, professional and organisational specific knowledge that an individual need in order to perform to the required standard.</p> |
| <p>Organisational Context</p> | <p>Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.</p> |
| <p>Technical Knowledge</p> | <p>Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.</p> |
| <p>Core Skills/Generic Skills (GS)</p> | <p>Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today’s world. These skills are typically needed in any work environment in today’s world. These skills are typically needed in any work environment. In the context of the OS, these include communication-related skills that are applicable to most job roles.</p> |
| <p>Electives</p> | <p>Electives are NOS/set of NOS that are identified by the sector as contribute to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.</p> |
| <p>Options</p> | <p>Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.</p> |