

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR MINING INDUSTRY



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What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack – Loader Operator

SECTOR: MINING

SUB-SECTOR: Mining Operation

OCCUPATION: HEMM Operations

REFERENCE ID: MIN/Q 0208

ALIGNED TO: NCO-2004/8332.14

Brief Job Description: A Loader operator drives and operates a Loader which is a heavy vehicle that is used in mines to move aside or load ROM, product etc. into or onto another type of machinery (such as a dump truck, conveyor belt, feed-hopper etc. Using a loader is a specialized task that can be safely performed with some training and experience. Safety is extremely critical to avoid property damage and personal injury. Operators are also responsible for performing basic maintenance on the Loader.

Personal Attributes: This job requires the individual to concentrate on the job at hand and complete it efficiently and effectively without any accidents so diligence and hard-working are desired attributes for individuals in this role. The individual must possess quick reflexes and reaction time. He must also demonstrate strong work ethics, an ability to communicate courteously with co-workers, and must be good with following instructions of the supervisor.

Qualifications Pack Code	MIN/Q 0208		
Job Role	Loader Operator		
	This job role is applicable in both national and international scenarios		
Credits(NSQF)	Level 4	Version number	1.0
Sector	Mining	Drafted on	01/02/2014
Sub-sector	Mining Operation	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2017
NSQC Clearance on	20/07/2015		

Job Role	Loader Operator
Role Description	drives and operates a Loader which is a heavy vehicle used in mines to move aside or load ROM, product etc. into or onto another type of machinery such as a dump truck or conveyor belt
NSQF level	4
Minimum Educational Qualification	Preferable Class XII
Minimum Educational Qualification	Not applicable
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> Technical and gallery training as per first schedule, Mining Vocational Training Rules (MVTR) 1966. Heavy Commercial Vehicle Driving License
Minimum Job Entry Age	18 Years
Experience	N.A.
Applicable National Occupational Standards	<p>Compulsory:</p> <ol style="list-style-type: none"> MIN/N 0228 (Prepare Loader) MIN/N 0229 (Perform Loader Operations) MIN/N 0230 (Perform basic maintenance and troubleshooting on Loader) MIN/N 0231 (Carry Out Reporting and Logging – Loader Operator) MIN/N 0204 (Health and Safety) <p>Optional :</p> <p>Not applicable</p>
Performance Criteria	As described in the relevant OS units

Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses 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.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
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 they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification 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.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working 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.

National Occupational Standard



Overview

This unit is about preparing the Loader for activities that need to be carried out during a shift

MIN/N 0228

Prepare Loader

National Occupational Standard

Unit Code		MIN/N 0228
Unit Title(Task)		Prepare Loader
Description	This unit is about preparing the Loader for activities that need to be carried out during a shift	
Scope	<p>This OS unit/task covers the following:</p> <ul style="list-style-type: none"> • Conducting pre-operation checks to ensure the Loader is safe to use. • Recording details of checking and maintenance 	
Performance Criteria (PC) w.r.t. the Scope		
Element	Performance Criteria	
Conducting pre-operation checks to ensure the Loader is safe to use.	To be competent, the user/individual on the job must be able to:	
	PC1.	Adhere to time limits given by supervisor
	PC2.	Check all mounting bolts for tightness
	PC3.	Check that all securing pins are in position in pivot pins and ram pins
	PC4.	Check that hose routes are clean and free from soil and stones etc.
	PC5.	Check that the area around the slewing rams is clean and clear of any debris.
	PC6.	Check hydraulic oil level. If necessary replenish with clean new hydraulic oil
	PC7.	Check radiator coolant level monitor.
	PC8.	Check engine oil level monitor
	PC9.	Check condition of parking brake, main horn, reverse horn, and head light.
	PC10.	Check the various control gauges.
	PC11.	Check fan belt tension, electrolyte level and terminal tightness
	PC12.	Clean air filter dust bowls
	PC13.	Drain water and sediment from the fuel tank.
	PC14.	Apply grease to all greasing pins and pivot points
	PC15.	Follow manufacturer's instructions for care and safe operation of the Loader.
	PC16.	Work responsibly and carefully so as not to put the health and safety of self or others at risk.
PC17.	Before beginning with the task, clearly understand the dimensions of the machine, the work area, weight of the machine as well as the heavy load to ensure safety while in operation	

Recording details of checking and maintenance	<p>PC18. Maintain a checking/maintenance logbook to record all activities performed before starting the Loader</p> <p>PC19. Inform supervisor of problems that are beyond scope of his role</p>
Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. Job specific documents e.g. daily maintenance checklist and its significance KA2. Locally prepared emergency response / disaster management plan. KA3. Safety policy of the company KA4. Risk and impact of not following defined procedures/work instructions KA5. Escalation matrix for reporting identified problems KA6. Cost of equipment and loss for the company that results from damage of equipment KA7. Direct/indirect cost of accidents for the company KA8. Implications of delays in process to the company <p>Safety guidelines specified by Directorate General of Mine Safety (DGMS))</p> <ul style="list-style-type: none"> KA9. Different types of mines and detail of the mine he is working in KA10. Mine Organisation, time keeping, need for discipline and punctuality KA11. Benching in quarries, Dressing of overhangs, undercuts, fencing, first aid and hygiene KA12. Code of traffic in specific areas of mine. Significance of fences KA13. Standing orders in force at the mine. Safety in the vicinity of machinery KA14. Shot-firing and Safety regulations. How and where to take shelter KA15. Tramways and siding, Haulage rooms, Winding rooms, Boilers, Electrical Gears KA16. Duties of workmen under Mines act KA17. Provision of wages, working hours and accident compensation as per Mines act KA18. Knowledge of mining safety procedures KA19. Outcome of violation of safely procedures KA20. Environmental impact of mining KA21. Sources of dust, noise and vibration and measures to minimise KA22. Precautions to be taken when handling heavy equipment. KA23. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.

Prepare Loader

<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Different types of loader (bucket loader, front loader, front-end loader, pay-loader, scoop, shovel, skip loader, or wheel loader) and their specific uses.</p> <p>KB2. Introduction to petrol and diesel engines, their components and functions</p> <p>KB3. Steering and transmission systems</p> <p>KB4. Different types of hydraulic mechanisms</p> <p>KB5. Service brakes and parking brakes</p> <p>KB6. Instrument panel, their location and operation</p> <p>KB7. Knowledge of wheels, tyres, optimal pressure</p> <p>KB8. Controls, levers and switches in order to operate the Loader properly</p> <p>KB9. Battery and Dynamo connections</p> <p>KB10. General safety rules vis-à-vis digging and stacking.</p> <p>KB11. Signage, mining area signs and other safety and emergency signals</p> <p>KB12. Correct maintenance procedures for Loader</p> <p>KB13. Response to emergencies e.g. correct way to use fire extinguisher</p> <p>KB14. Optimal working condition of Loader components e.g. hoist, propel system, power train and other attachments.</p> <p>KB15. Visual checks to identify damage, defects, cracks or leaks beforehand</p> <p>KB16. Parts of Loader that need routine lubrication</p> <p>KB17. Optimal engine oil pressure, radiator coolant temperature</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. note down observations (if any)</p> <p>SA2. write information documents or enter the information in online ERP systems under guidance of the supervisor</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. read and interpret symbols and measurements</p> <p>SA4. read information documents</p> <p>SA5. understand and analyse the available data about the site</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. discuss task lists, schedules and activities</p> <p>SA7. effectively communicate</p> <p>SA8. attentively listen with full attention and comprehend the information given by various sources about the site</p>

MIN/N 0228

Prepare Loader

B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. make decisions pertaining to the concerned area of work.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. plan and organize the work order and jobs SB3. organize all process manuals so that sorting/ accessing information is easy
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. detect problems in day to day tasks SB5. discuss possible solution with the supervisor for problem solving SB6. make decisions in emergency conditions
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. follow instructions and work on areas of improvement identified SB8. complete the assigned tasks with minimum supervision SB9. complete the job within timelines and quality norms
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB10. use common sense and make judgments during day to day basis SB11. use reasoning skills to identify and resolve basic problems SB12. use intuition to detect any potential problems which could arise

Prepare Loader

NOS Version Control

NOS Code	MIN/N 0228		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	01/02/2014
Sub-sector	Mining Operation	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2017

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National Occupational Standard



Overview

This unit is about performing operations while using the Loader

Unit Code	MIN/N 0229
Unit Title(Task)	Perform Loader Operations
Description	This unit is about operating the Loader
Scope	<p>This OS unit/task covers the following:</p> <ul style="list-style-type: none"> Starting and driving the Loader safely to the operations area Loader operations
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Starting and driving the Loader safely to the operations area	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Plan and organize the job according to given instructions and schedule</p> <p>PC2. Inspect the worksite to identify any loose soil, hidden deep trenches or marshy patches where loader could get stuck.</p> <p>PC3. Start the engine using the pushbutton switch and key switch together</p> <p>PC4. Use the priming pump and pre-heater to start the engine in cold weather conditions</p> <p>PC5. Ensure that the backhoe is in transport position while the tractor is moving.</p> <p>PC6. Operate the shifting quadrant device for selecting the correct gear range</p> <p>PC7. Ensure the loader load and operating speed is within limits; specifically limits speed when moving around pipes, cables or other workers.</p> <p>PC8. Perform in-operation visual checks on critical temperature and pressure gauges.</p> <p>PC9. Ensure that walkway rules e.g. operating the Loader within the permissible/allocated areas are followed.</p> <p>PC10. Utilize judiciously various signaling devices available in the Loader such as turn signal, parking indicator, air horn etc.</p> <p>PC11. Keep a safe distance from a tip edge and use an approved stop block before tipping over an edge</p> <p>PC12. Keep a safe distance from other plant or vehicles</p>

Perform loader operations

Operate Loader	<p>PC13. Deploys the digger stabilizer legs to level the machine when working on a slope</p> <p>PC14. Obtains stability and anchorage during digging operation by using the loader arms to lift the front wheel clear on the ground.</p> <p>PC15. Deftly operates the four levers provided to control the digging arm, dipper arm and stabilizer legs</p> <p>PC16. Effectively maneuvers the joystick lever provided for backhoe operations.</p> <p>PC17. Discharge the load safely at the position and in the manner designated by the supervisor</p> <p>PC18. Ensure that no other operators travel on or stand near the Loader</p> <p>PC19. Ensure that backhoe is never used for craning</p> <p>PC20. Select and use the right type of brake in different situations and conditions.</p> <p>PC21. Inform supervisor of any problems while operating the Loader</p> <p>PC22. Ensure that Loader is always parked on firm, level ground; with handbrake applied and drive and controls disengaged</p>
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Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>Job specific documents e.g. daily maintenance checklist and importance of the same</p> <p>KA1. Safety policy of the company</p> <p>KA2. Locally prepared emergency response / disaster management plan</p> <p>KA3. Risk and impact of not following defined procedures/work instructions</p> <p>KA4. Escalation matrix for reporting identified problems</p> <p>KA5. Cost of equipment and loss for the company that results from damage of equipment</p> <p>KA6. Direct/indirect cost of accidents for the company</p> <p>KA7. Implications of delays in process to the company</p> <p>Safety guidelines specified by Directorate General of Mine Safety (DGMS))</p> <p>KA8. Different types of mines and detail of the mine he is working in</p> <p>KA9. Mine Organisation, time keeping, need for discipline and punctuality</p> <p>KA10. Benching in quarries, Dressing of overhangs, undercuts, Fencing, First aid and Hygiene</p> <p>KA11. Code of traffic in specific areas of mine. Significance of fences</p>

Perform loader operations

	<p>KA12. Standing orders in force at the mine. Safety in the vicinity of machinery</p> <p>KA13. Shot-firing and Safety regulations. How and where to take shelter</p> <p>KA14. Tramways and siding, Haulage rooms, Winding rooms, Boilers, Electrical Gears</p> <p>KA15. Duties of workmen under Mines act</p> <p>KA16. Provision of wages, working hrs. and accident compensation as per Mines act</p> <p>KA17. Knowledge of mining safety procedures</p> <p>KA18. Outcome of violation of safely procedures</p> <p>KA19. Precautions to be taken when handling heavy equipment.</p> <p>KA20. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Different types of loader (bucket loader, front loader, front-end loader, pay-loader, scoop, shovel, skip loader, or wheel loader) and their specific use.</p> <p>KB2. Basics of engine, its components and their functioning</p> <p>KB3. Different types of steering mechanism, emergency steering function</p> <p>KB4. Basics of power transmission</p> <p>KB5. Functions of the three types of brakes - Service brake, Torque converter and Parking brake</p> <p>KB6. Identification, location and function of all controls available in the instrument panel.</p> <p>KB7. Safe reading range of meters and gauges e.g. fuel gauge, engine oil pressure and temperature</p> <p>KB8. Battery and dynamo connections</p> <p>KB9. General safety guidelines for loading, hauling, dumping, stocking and parking in a mine.</p> <p>KB10. Signage and other safety and emergency signals</p> <p>KB11. Working in congested places like stock piles and below dangerous overhangs</p> <p>KB12. Risks involved in working on defective machine</p> <p>KB13. Response to emergencies e.g. fire or major failure</p> <p>KB14. Operating steps of various grades of fire extinguishers.</p> <p>KB15. Identify any unusual sound emanating from the engine</p>

Perform loader operations

Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. note down observations (if any) SA2. write information documents or enter the information in online ERP systems under guidance of the supervisor
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. read and interpret symbols and measurements SA4. read information documents SA5. understand and analyse the available data about the site
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. discuss task lists, schedules and activities SA7. effectively communicate SA8. attentively listen with full attention and comprehend the information given by various sources about the site
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. make decisions pertaining to the concerned area of work.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. plan and organize the work order and jobs SB3. organize all process manuals so that sorting/ accessing information is easy
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. detect problems in day to day tasks SB5. discuss possible solution with the supervisor for problem solving SB6. make decisions in emergency conditions
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. follow instructions and work on areas of improvement identified SB8. complete the assigned tasks with minimum supervision SB9. complete the job within timelines and quality norms
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB10. use common sense and make judgments during day to day basis SB11. use reasoning skills to identify and resolve basic problems SB12. use intuition to detect any potential problems which could arise

NOS Version Control

NOS Code	MIN/N 0229		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	01/02/2014
Sub-sector	Mining Operation	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2017

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National Occupational Standard



Overview

This unit is about performing routine maintenance and troubleshooting on the Loader

Unit Code	MIN/N 0230
Unit Title (Task)	Perform routine maintenance and troubleshooting on the Loader
Description	This unit is about performing routine maintenance and troubleshooting tasks on the Loader.
Scope	<p>This OS unit/task covers the following:</p> <ul style="list-style-type: none"> Preventive maintenance in accordance with the manufacturer's recommendations and company procedures Basic diagnostics and Troubleshooting
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Preventive maintenance in accordance with the manufacturer's	<p>To be a competent loader operator, the individual on the job must also be able to:</p> <p>PC1. Track machine operating hours to assess the right service schedule.</p> <p>PC2. Clean air filter dust bowls</p> <p>PC3. Clean footplates, pedals and steps free from mud, dirt, ice and snow</p> <p>PC4. Drain water and sediment /fuel separators</p> <p>PC5. Replenish coolants, lubricants and fluids</p> <p>PC6. Grease all greasing pins and pivot points</p> <p>PC7. Check battery levels and condition of the terminals and carrying out minor adjustments if required.</p> <p>PC8. Check and maintain the tyre rims, air pressure, wheel nuts and treads.</p> <p>PC9. Complete timely and legibly daily/weekly maintenance/defect sheets as provided by the company</p>
Basic diagnostics and Troubleshooting	<p>PC10. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)</p> <p>PC11. Ensure that no maintenance task on the engine is performed when running or still hot.</p> <p>PC12. Check the instrument panel and control gauge to identify out-of range readings to find the defect / cause of failure</p> <p>PC13. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel</p>

Knowledge and Understanding (K)	
<p>A. Organizational</p> <p>Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Types of documentation in organization e.g. daily maintenance checklist and importance of the same</p> <p>KA2. Risk and impact of not following defined procedures/work instructions</p> <p>KA3. Rules and regulations of mine as per standard operating procedure (SOP)</p> <p>KA4. Risk and impact of not following company's SOP</p> <p>KA5. Escalation matrix for reporting identified problems</p> <p>Safety guidelines specified by Directorate General of Mine Safety (DGMS)</p> <p>KA6. Different types of mines and detail of the mine he is working in</p> <p>KA7. Mine Organisation, time keeping, need for discipline and punctuality</p> <p>KA8. Benching in quarries, Dressing of overhangs, undercuts, Fencing, First aid and Hygiene</p> <p>KA9. Code of traffic in specific areas of mine. Significance of fences</p> <p>KA10. Standing orders in force at the mine. Safety in the vicinity of machinery</p> <p>KA11. Shot-firing and Safety regulations. How and where to take shelter</p> <p>KA12. Tramways and siding, Haulage rooms, Winding rooms, Boilers, Electrical Gears</p> <p>KA13. Duties of workmen under Mines act</p> <p>KA14. Provision of wages, working hours and accident compensation as per Mines act</p> <p>KA15. Knowledge of mining safety procedures</p> <p>KA16. Outcome of violation of safely procedures</p> <p>KA17. Precautions to be taken when handling explosives</p> <p>KA18. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.</p>

MIN/N 0230

Perform routine maintenance on Loader

B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. Different types of Loaders and their specific use KB2. Introduction to petrol and diesel engines, their components and functions KB3. Steering and transmission systems KB4. Different types of hydraulic mechanisms KB5. Service brakes and parking brakes KB6. Instrument panel, their location and operation KB7. Controls, levers and switches in order to operate the Loader properly KB8. Battery and Dynamo connections KB9. General safety rules vis-à-vis digging and stacking. KB10. Signage, mining area signs and other safety and emergency signals KB11. Correct maintenance procedures for Loader KB12. Response to emergencies e.g. correct way to use fire extinguisher KB13. Optimal working condition of Loader components e.g. hoist, propel system, power train and other attachments. KB14. Visual checks to identify damage, defects or leaks beforehand KB15. Parts of Loader that need routine lubrication
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: <ul style="list-style-type: none"> SA1. note down observations (if any) SA2. write information documents or enter the information in online ERP systems under guidance of the supervisor
	Reading Skills
	The user/individual on the job needs to know and understand how to: <ul style="list-style-type: none"> SA3. read and interpret symbols and measurements SA4. read information documents SA5. understand and analyse the available data about the site
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: <ul style="list-style-type: none"> SA6. discuss task lists, schedules and activities SA7. effectively communicate SA8. attentively listen with full attention and comprehend the information given by various sources about the site
	Decision Making

MIN/N 0230

Perform routine maintenance on Loader

B. Professional Skills	The user/individual on the job needs to know and understand how to: SB1. make decisions pertaining to the concerned area of work.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. plan and organize the work order and jobs SB3. organize all process manuals so that sorting/ accessing information is easy
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. detect problems in day to day tasks
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. follow instructions and work on areas of improvement identified SB8. complete the assigned tasks with minimum supervision SB9. complete the job within timelines and quality norms
	Critical Thinking
The user/individual on the job needs to know and understand how to: SB10. use common sense and make judgments during day to day basis SB11. use reasoning skills to identify and resolve basic problems SB12. use intuition to detect any potential problems which could arise	



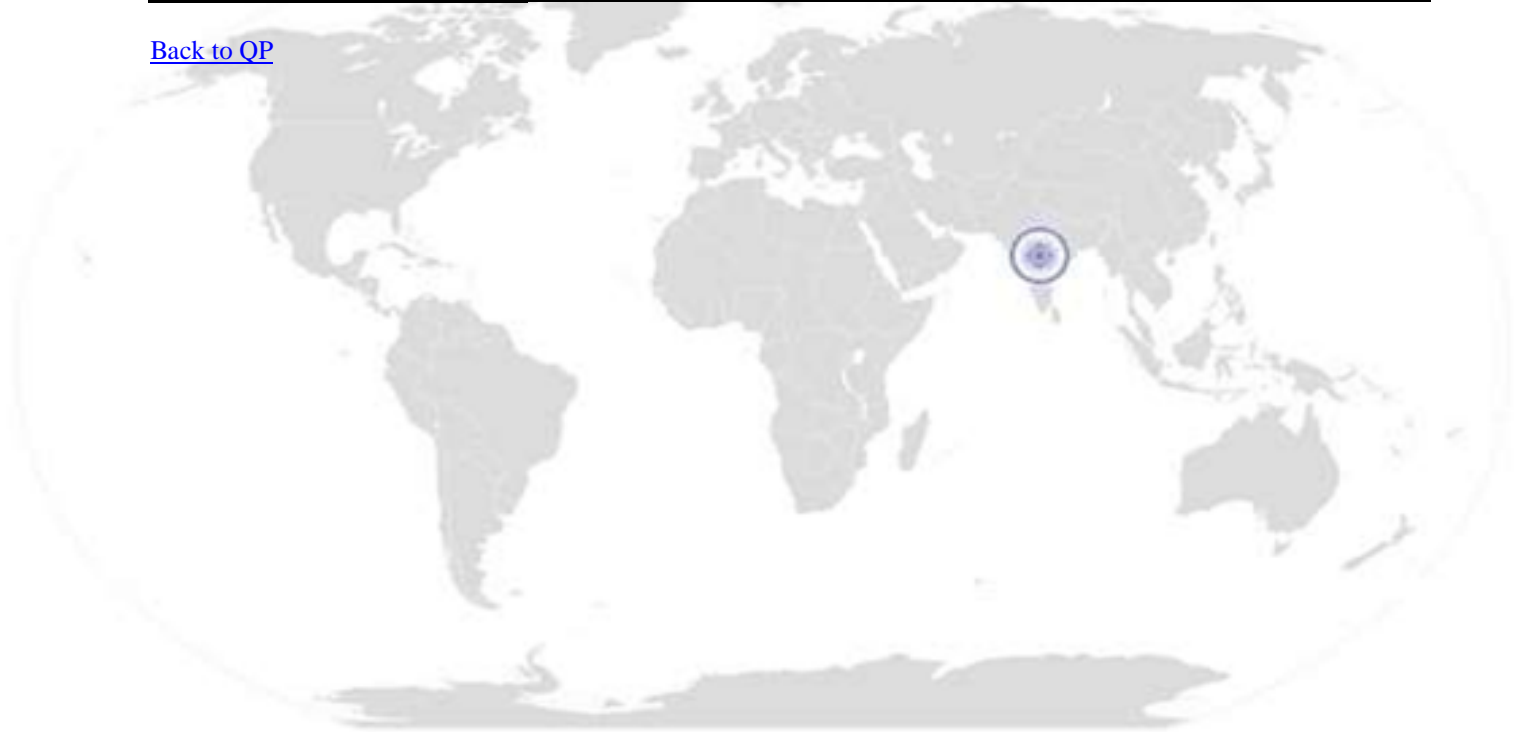
MIN/N 0230

Perform routine maintenance on Loader

NOS Version Control

NOS Code	MIN/N 0230		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	01/02/2014
Sub-sector	Mining Operation	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2017

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National Occupational Standard



Overview

This unit is about reporting and documentation

MIN/N 0231

Documentation and Reporting – Loader Operator

National Occupational Standard

Unit Code	MIN/N 0231
Unit ID (Task)	Carry out reporting and documentation
Description	This unit is about carrying out reporting and documentation
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Reporting of problem/incidents etc. • Documentation
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Reporting of problem/incidents etc.	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> PC1. Report problems/incidents as applicable in a timely manner PC2. Report to the appropriate authority as laid down by the employer PC3. Follow reporting procedures as prescribed by the employer PC4. Report any unsafe act/condition in work area which may endanger his or his colleagues life
Documentation	<ul style="list-style-type: none"> PC5. Identify documentation to be completed relating to one's role PC6. Record details accurately using the appropriate format PC7. Complete all documentation within stipulated time. PC8. Make sure documents are available to all appropriate authorities to inspect
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. Job specific documents e.g. daily maintenance checklist and importance of the same KA2. Safety policy of the company KA3. Risk and impact of not following defined procedures/work instructions KA4. Escalation matrix for reporting identified problems KA5. Cost of equipment and loss for the company that results from damage of equipment Safety guidelines specified by Directorate General of Mine Safety (DGMS) <ul style="list-style-type: none"> KA6. Different types of mines and detail of the mine he is working in

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Documentation and Reporting – Loader Operator

	<p>KA7. Commonly used mining terminology - Benches (width, height etc.), haul roads (width, gradient), stability of slopes, over hang, under cut, high side etc.</p> <p>KA8. Duties of workmen under Mines act</p> <p>KA9. Provision of wages, working hours and accident compensation as per Mines act</p> <p>KA10. Knowledge of mining safety procedures</p> <p>KA11. Outcome of violation of safely procedures</p>
Skills (S)	



Documentation and Reporting – Loader Operator

A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. note down observations (if any) SA2. write information documents or enter the information in online ERP systems under guidance of the supervisor
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. read and interpret symbols and measurements SA4. read information documents SA5. understand and analyse the available data about the site
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. discuss task lists, schedules and activities SA7. effectively communicate SA8. attentively listen with full attention and comprehend the information given by various sources about the site
	B. Professional Skills
	Decision Making
The user/individual on the job needs to know and understand how to: SB1. make decisions pertaining to the concerned area of work.	
Plan and Organize	
The user/individual on the job needs to know and understand how to: SB2. plan and organize the work order and jobs SB3. organize all process manuals so that sorting/ accessing information is easy	
Customer Centricity	
NA	
Problem Solving	
The user/individual on the job needs to know and understand how to: SB4. detect problems in day to day tasks SB5. discuss possible solution with the supervisor for problem solving SB6. make decisions in emergency conditions	
Analytical Thinking	
The user/individual on the job needs to know and understand how to: SB7. follow instructions and work on areas of improvement identified SB8. complete the assigned tasks with minimum supervision SB9. complete the job within timelines and quality norms	
Critical Thinking	

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The user/individual on the job needs to know and understand how to:

- SB10. use common sense and make judgments during day to day basis
- SB11. use reasoning skills to identify and resolve basic problems
- SB12. use intuition to detect any potential problems which could arise



NOS Version Control

NOS Code	MIN/N 0231		
Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
Sector	Mining	Drafted on	01/02/2014
Sub-sector	Mining Operation	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2017

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National Occupation Standards



Overview

This unit is about health and safety measures critical in open-cast mines

Health and Safety

National Occupational Standard

Unit Code	MIN/N 0204
Unit Title (Task)	Health and Safety
Description	This unit is about health and safety measures critical in open-cast mines
Scope	This OS unit/task covers the following: <ul style="list-style-type: none"> Critical health and safety measures for open-cast mines
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Critical health and safety measures for open-cast mines	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Comply with occupational health and safety regulations adopted by the employer.</p> <p>PC2. Follow mining operations procedures with respect to materials handling and accidents</p> <p>PC3. Follow the correct safety steps in case of accident or major failure</p> <p>PC4. Comply with safety regulations and procedures in case of fire hazard.</p> <p>PC5. Operate various grades of fire extinguishers.</p> <p>PC6. Work responsibly and as safe and careful as possible so as not to put the health and safety of self or others at risk, including members of the public</p> <p>PC7. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.</p> <p>PC8. Identify characteristics of post-blast fumes and take necessary precautions.</p> <p>PC9. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection</p> <p>PC10. Follow the manufacturer's instructions for care and safe operation of the equipment.</p>

Health and Safety

Knowledge and Understanding (K)

A. Organizational Context
(Knowledge of organization and its processes)

The user/individual on the job needs to know and understand:

- KA1. Benching in quarries, Dressing of overhangs, undercuts, Fencing
- KA2. First aid and Hygiene
- KA3. Code of traffic in specific areas of mine. Significance of fences
- KA4. Standing orders in force at the mine. Safety in the vicinity of machinery
- KA5. Shot-firing and Safety regulations. How and where to take shelter
- KA6. Knowledge of mining safety procedures
- KA7. Outcome of violation of safety procedures
- KA8. Hazardous material safety and security rules and regulations
- KA9. Environmental impact of mining
- KA10. Sources of dust, noise and vibration and measures to minimise
- KA11. Code of practice for safe handling and transport of heavy equipment.

NOS Version Control

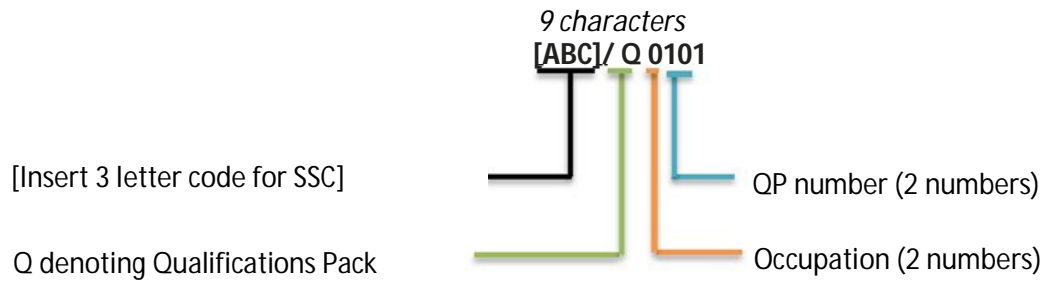
NOS Code	MIN / N 0204		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	01/02/2014
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2017

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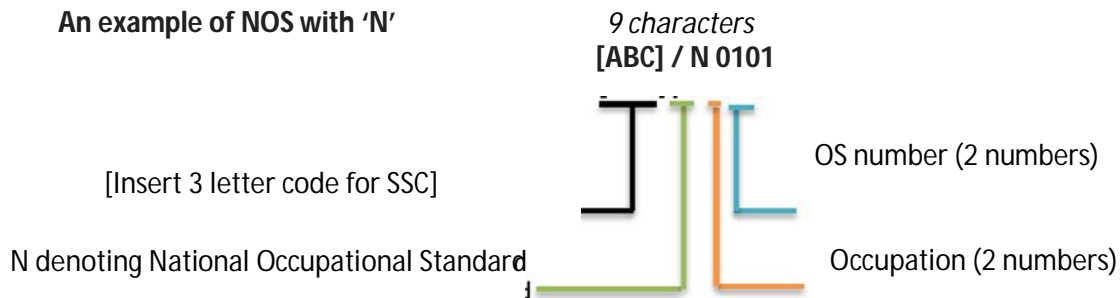
Nomenclature for QP and NOS units

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



Nomenclature for QP and NOS units

The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Exploration & Resource Management	1 to 25
Mining Operation	26 to 65
Engineering Services	66 to 90
Mineral Beneficiation	91 to 99

Sequence	Description	Example
Three letters	Industry name	MIN
Slash	/	/
Next letter	Whether QP or NOS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

List of Abbreviations

Term	Description
NOS	National occupation standards
QP	Qualification pack
NVEQF	National vocational education qualifications framework
NSQF	National skills qualifications framework
HEMM	Heavy earth moving machinery
NCVT	National council for vocational training
DGMS	Directorate General of mines safety
PC	Performance Criteria
FIMI	Federation of Indian Mineral industries



CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Loader Operator

Qualification Pack MIN/Q 0208

Sector Skill Council Skill Council for Mining Sector

Guidelines for Assessment

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 proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessment Outcome	Assessment Criteria	Total Mark (100)	Out Of	Marks Allocation	
				Theory	Skills Practical
1. MIN/N 0228 (Prepare Loader)	PC1. Adhere to time limits given by supervisor	20	1	1	0
	PC2. Check all mounting bolts for tightness		1	0	1
	PC3. Check that all securing pins are in position in pivot pins and ram pins		1	0	1
	PC4. Check that hose routes are clean and free from soil and stones etc.		1	0	1
	PC5. Check that the area around the slewing rams is clean and clear of any debris.		1	0	1
	PC6. Check hydraulic oil level. If necessary replenish with clean new hydraulic oil		1	0	1
	PC7. Check radiator coolant level monitor.		1	0	1

	PC8. Check engine oil level monitor		1	0	1
	PC9. Check condition of parking brake, main horn, reverse horn, and head light.		1	0	1
	PC10. Check the various control gauges.		1	0	1
	PC11. Check fan belt tension, electrolyte level and terminal tightness		1	0	1
	PC12. Clean air filter dust bowls		1	0	1
	PC13. Drain water and sediment from the fuel tank.		1	0	1
	PC14. Apply grease to all greasing pins and pivot points		1	0	1
	PC15. Follow manufacturer's instructions for care and safe operation of the Loader.		1	1	0
	PC16. Work responsibly and carefully so as not to put the health and safety of self or others at risk.		1	0	1
	PC17. Before beginning with the task, clearly understand the dimensions of the machine, the work area, weight of the machine as well as the heavy load to ensure safety while in operation		2	1	1
	PC18. Maintain a checking/maintenance logbook to record all activities performed before starting the Loader		1	1	0
	PC19. Inform supervisor of problems that are beyond scope of his role		1	1	0
		Total	20	5	15
2. MIN/N 0229 (Perform Loader Operations)	PC1. Plan and organize the job according to given instructions and schedule		1	1	0
	PC2. Inspect the worksite to identify any loose soil, hidden deep trenches or marshy patches where loader could get stuck.	30	1	0	1
	PC3. Start the engine using the pushbutton switch and key switch together		1	0	1

	PC4. Use the priming pump and pre-heater to start the engine in cold weather conditions
	PC5. Ensure that the backhoe is in transport position while the tractor is moving.
	PC6. Operate the shifting quadrant device for selecting the correct gear range
	PC7. Ensure the loader load and operating speed is within limits; specifically limits speed when moving around pipes, cables or other workers.
	PC8. Perform in-operation visual checks on critical temperature and pressure gauges.
	PC9. Ensure that walkway rules e.g. operating the Loader within the permissible/allocated areas are followed.
	PC10. Utilize judiciously various signaling devices available in the Loader such as turn signal, parking indicator, air horn etc.
	PC11. Keep a safe distance from a tip edge and use an approved stop block before tipping over an edge
	PC12. Keep a safe distance from other plant or vehicles
	PC13. Deploys the digger stabilizer legs to level the machine when working on a slope
	PC14. Obtains stability and anchorage during digging operation by using the loader arms to lift the front wheel clear on the ground.
	PC15. Deftly operates the four levers provided to control the digging arm, dipper arm and stabilizer legs
	PC16. Effectively maneuvers the joystick lever provided for backhoe operations.
	PC17. Discharge the load safely at the position and in the manner designated by the supervisor
	PC18. Ensure that no other operators travel on or stand near the Loader
	PC19. Ensure that backhoe is never used for craning

1	0	1
1	0	1
1	0	1
1	1	0
1	0	1
1	0	1
1	0	1
2	0	2
1	0	1
1	0	1
1	0	1
1	0	1
1	0	1
1	0	1
1	0	1
1	0	1

	PC20. Select and use the right type of brake in different situations and conditions.		2	1	1
	PC21. Inform supervisor of any problems while operating the Loader		1	1	0
	PC22. Ensure that Loader is always parked on firm, level ground; with handbrake applied and drive and controls disengaged		2	1	1
		Total	25	5	20
3. MIN/N 0230 (Perform basic maintenance and troubleshooting on Loader)	PC1. Track machine operating hours to assess the right service schedule.	15	1	1	0
	PC2. Clean air filter dust bowls		1	0	1
	PC3. Clean footplates, pedals and steps free from mud, dirt, ice and snow		1	0	1
	PC4. Drain water and sediment /fuel separators		1	0	1
	PC5. Replenish coolants, lubricants and fluids		1	0	1
	PC6. Grease all greasing pins and pivot points		1	0	1
	PC7. Check battery levels and condition of the terminals and carrying out minor adjustments if required.		1	0	1
	PC8. Check and maintain the tyre rims, air pressure, wheel nuts and treads.		2	1	1
	PC9. Complete timely and legibly daily/weekly maintenance/defect sheets as provided by the company		1	1	0
	PC10. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)		1	0	1
	PC11. Ensure that no maintenance task on the engine is performed when running or still hot.		1	0	1
	PC12. Check the instrument panel and control gauge to identify out-of range readings to find the defect / cause of failure		2	1	1
	PC13. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel		1	1	0
		Total	15	5	10

4. MIN/N 0231 (Carry Out Reporting and Logging)	PC1. Report problems/incidents as applicable in a timely manner	10	1	0	1
	PC2. Report to the appropriate authority as laid down by the employer		1	1	0
	PC3. Follow reporting procedures as prescribed by the employer		1	0	1
	PC4. Report any unsafe act/condition in work area which may endanger his or his colleagues life		2	1	1
	PC5. Identify documentation to be completed relating to one's role		1	0	1
	PC6. Record details accurately using the appropriate format		1	0	1
	PC7. Complete all documentation within stipulated time.		1	1	0
	PC8. Make sure documents are available to all appropriate authorities to inspect		2	1	1
		Total	10	4	6
5. MIN/N 0204 (Health and Safety)	PC1. Comply with occupational health and safety regulations adopted by the employer.	30	2	1	1
	PC2. Follow mining operations procedures with respect to materials handling and accidents		2	1	1
	PC3. Follow the correct safety steps in case of accident or major failure		2	1	1
	PC4. Comply with safety regulations and procedures in case of fire hazard.		3	1	2
	PC5. Operate various grades of fire extinguishers.		4	1	3
	PC6. Work responsibly and as safe and careful as possible so as not to put the health and safety of self or others at risk, including members of the public		4	1	3
	PC7. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.		3	1	2
	PC8. Identify characteristics of post-blast fumes and take necessary precautions.		3	0	3
	PC9. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection		4	1	3
	PC10. Follow the manufacturer's instructions for care and safe operation of the equipment.		3	1	2
		Total	30	9	21