

## QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR MINING INDUSTRY

### 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 – Bulldozer Operator

**SECTOR:** MINING

**SUB-SECTOR:** Mining Operation

**OCCUPATION:** HEMM Operations

**REFERENCE ID:** MIN/Q 0205

**ALIGNED TO:** NCO-2004/8332.10

**Brief Job Description:** The bulldozer operator uses the tractor and blade to scoop out soil, move rock and ore to other locations on the site, and to level the soil. Bulldozers are capable of pushing ore and rock. Bulldozer operators are also responsible for confirming that their safety systems are working properly and for performing basic maintenance on the Bulldozer.

**Personal Attributes:** This job requires the individual to concentrate on the job at hand and complete it efficiently and effectively without any accidents. The individual should be skilled in performing various driving and maneuvering operations with the Bulldozer. The individual must be able to follow instructions provided by supervisor.

## Prepare Bulldozer

Job Details	<b>Qualifications Pack Code</b>	<b>MIN/Q 0205</b>		
	<b>Job Role</b>	<b>Bulldozer Operator</b> This job role is applicable in both national and international scenarios		
	<b>Credits (NSQF)</b>	TBD	<b>Version number</b>	1.0
	<b>Sector</b>	Mining	<b>Drafted on</b>	08/01/2014
	<b>Sub-sector</b>	Mining Operation	<b>Last reviewed on</b>	24/03/2014
	<b>Occupation</b>	HEMM operations	<b>Next review date</b>	24/03/2017
	<b>NSQC Clearance on</b>	<b>18/06/2015</b>		

Job Role	Bulldozer Operator
<b>Role Description</b>	Transporting material using Bulldozer
<b>NSQF level</b>	4
<b>Minimum Educational Qualifications</b>	Preferable Class X
<b>Maximum Educational Qualifications</b>	Not Applicable
<b>Training</b> (suggested but not mandatory)	<ol style="list-style-type: none"> <li>1. Technical and gallery training as per first schedule, Mining Vocational Training Rules (MVTR) 1966.</li> <li>2. Heavy commercial vehicle license</li> </ol>
<b>Minimum Job Entry Age</b>	18 Years
<b>Experience</b>	N.A.
<b>Applicable National Occupational Standards (NOS)</b>	<p><b>Compulsory:</b></p> <ol style="list-style-type: none"> <li>1. MIN/N 0215 (<a href="#">Prepare Bulldozer</a>)</li> <li>2. MIN/N 0216 (<a href="#">Perform Bulldozer Operations</a>)</li> <li>3. MIN/N 0217 (<a href="#">Carry Out Reporting and Documentation</a>)</li> <li>4. MIN/N 0204 (<a href="#">Health and Safety</a>)</li> </ol> <p><b>Optional:</b> Not Applicable</p>
<b>Performance Criteria</b>	As described in the relevant OS units

## Prepare Bulldozer

### 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.

Prepare Bulldozer

# National Occupational Standard



## Overview

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

## Prepare Bulldozer

National Occupational Standard

<b>Unit Code</b>	<b>MIN/N 0215</b>
<b>Unit Title (Task)</b>	<b>Prepare Bulldozer</b>
<b>Description</b>	This unit is about preparing the Bulldozer for activities that need to be carried out during a shift
<b>Scope</b>	This OS unit/task covers the following: <ul style="list-style-type: none"> <li>Conducting pre-operation checks &amp; routine maintenance of Bulldozer</li> <li>Reporting of recording details of checking and maintenance</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Pre-operation checks &amp; Routine maintenance</b>	PC1. Adhere to time limits given by supervisor PC2. Check oil levels of engine, transmission, radiator coolant and brake PC3. Check differential and hydraulic oil levels PC4. Check condition of parking brake, main horn, reverse horn, warning lamp and head light PC5. Ensure availability of safety features in Dozers like Audio Visual Alarm, camera, mirrors, Horn, auto fire protection system PC6. Check fan belt tension, electrolyte level and terminal tightness PC7. Clean the Bulldozer and outer element of air cleaner with compressed air PC8. Top up oil in engine, transmission, etc. if necessary after checking PC9. Apply grease to all greasing points PC10. Drain accumulated water from the diesel tank.
<b>Reporting of recording details of checking and maintenance</b>	PC11. Maintain a checking/maintenance logbook to detail all activities conducted before starting the Bulldozer PC12. Inform supervisor of those problems that extend beyond scope of one's role PC13. Fill out administrative forms as required by the company

## Prepare Bulldozer

### 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:

- KA1. Job specific documents e.g. daily maintenance checklist and importance of the same
  - KA2. Risk and impact of not following defined procedures/work instructions
  - KA3. Escalation matrix for reporting identified problems
  - KA4. Cost of equipment and loss for the company that results from damage of equipment
  - KA5. Direct /indirect cost of accidents
  - KA6. Implications of delays in process to the company
  - KA7. Bulldozer takeover procedures according to company's SOP
  - KA8. Locally prepared emergency response /disaster management plan
- Safety guidelines specified by Directorate General of Mines Safety (DGMS)
- KA9. Different types of mines and detail of the mine he is working in
  - KA10. Mine Organization, time keeping, need for discipline and punctuality
  - KA11. Benching in quarries, Dressing of overhangs, undercuts, Fencing, First aid and Hygiene
  - KA12. Code of practice 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 compensation and working hours as per Mines act
  - KA18. Knowledge of mining safety procedures
  - KA19. Outcome of violation of safely procedures
  - KA20. Precautions to be taken when handling explosive
  - KA21. 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 Bulldozer

<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Levers and switches in order to operate the Bulldozer properly</p> <p>KB2. Instrument panel and various controls</p> <p>KB3. Basic physics and mechanics involved in using the Bulldozer</p> <p>KB4. Signage, mining area signs and other safety and emergency signals</p> <p>KB5. Correct maintenance procedures for Bulldozer</p> <p>KB6. Response to emergencies e.g. fire</p> <p>KB7. Safety regulations while operating the Bulldozer</p> <p>KB8. Optimal working condition of Bulldozer components e.g. parking brake, main horn, reverse horn, etc.</p> <p>KB9. Optimal oil level of engine, transmission, etc.</p> <p>KB10. Parts of Bulldozer that need routine lubrication</p> <p>KB11. Optimal engine oil pressure, radiator coolant temperature</p>
<b>Skills (S)</b>	
<b>Element A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	<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>
	<b>Reading Skills</b>
	<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>
	<b>Oral Communication (Listening and Speaking skills)</b>
	<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>
<b>B. Professional Skills</b>	<b>Decision Making</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Make decisions pertaining to the concerned area of work.</p>
	<b>Plan and Organize</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB2. plan and organize the work order and jobs</p> <p>SB3. organize all process manuals so that sorting/ accessing information is easy</p>
	<b>Customer Centricity</b>
	NA

## Prepare Bulldozer

	<b>Problem Solving</b>
	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
	<b>Analytical Thinking</b>
	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
	<b>Critical Thinking</b>
	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



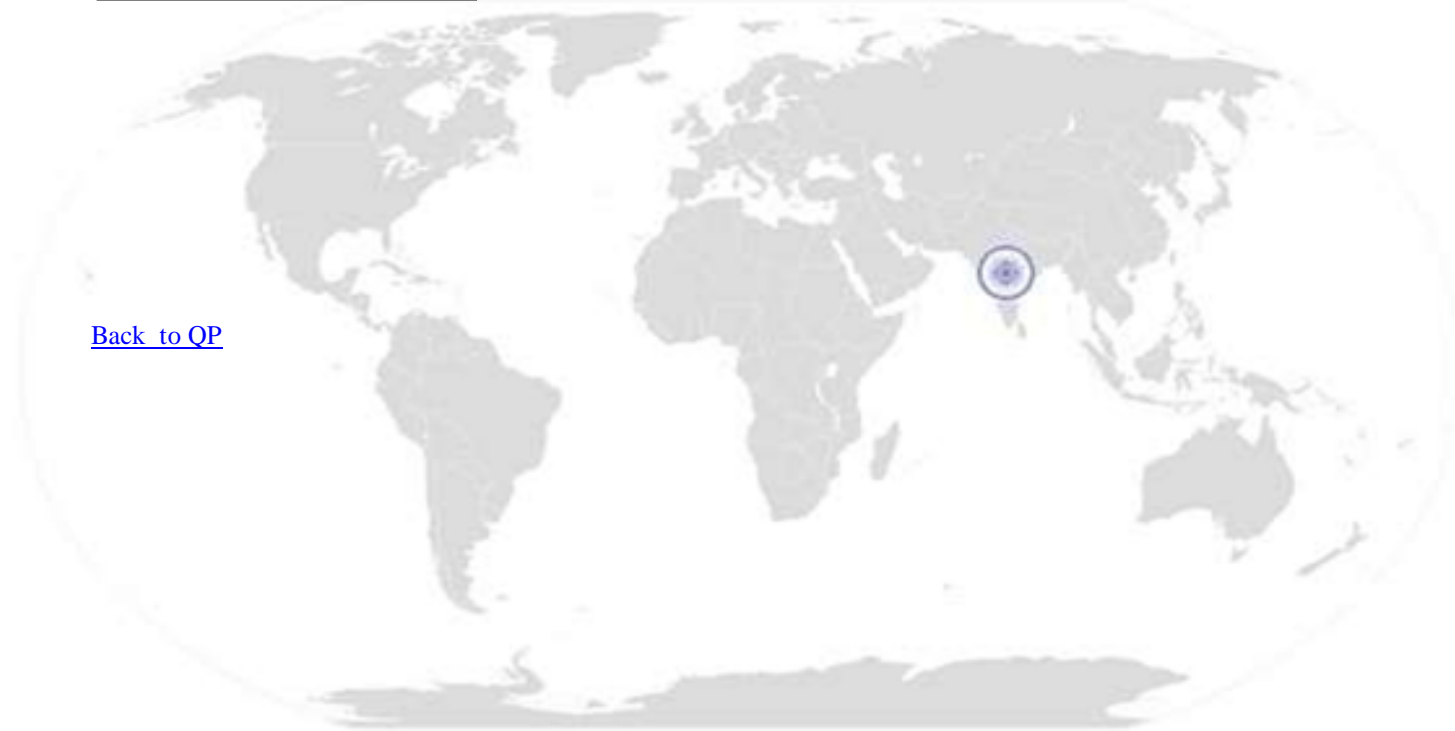


## Prepare Bulldozer

### NOS Version Control

<b>NOS Code</b>	<b>MIN/N0215</b>		
<b>Credits (NSQF)</b>	TBD	<b>Version number</b>	1.0
<b>Sector</b>	Mining	<b>Drafted on</b>	08/01/2014
<b>Sub-sector</b>	Mining Operation	<b>Last reviewed on</b>	24/03/2014
<b>Occupation</b>	HEMM operations	<b>Next review date</b>	24/03/2017

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**Perform Bulldozer Operations**

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# National Occupational Standard



## Overview

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**This unit is about performing operations while using the Bulldozer**

## Perform Bulldozer Operations

National Occupational Standard	<b>Unit Code</b>	<b>MIN/N 0216</b>
	<b>Unit Title(Task)</b>	<b>Perform Bulldozer Operations</b>
	<b>Description</b>	This unit is about performing operations while using the Bulldozer
	<b>Scope</b>	<p>This OS unit/task covers the following:</p> <ul style="list-style-type: none"> <li>Starting and driving the bulldozer to the operations area</li> <li>Engage and maneuver the blade to push or move around ore stacks/waste rock /rejects as necessary</li> <li>Use the blade appropriately for leveling the surface</li> </ul>
	<b>Performance Criteria (PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Starting and driving the bulldozer</b>	To be competent, the user/individual on the job must be able to:
		PC1. Plan the dozing job before starting the maneuver
		PC2. Inspect the site to identify any loose soil, hidden deep trenches or marshy patches where dozer could get stuck.
		PC3. Ensure Bulldozer load and operating speed is within specified limits
PC4. Adhere to load targets and time limits given by supervisor		
<b>Engage and maneuver the blade to push or move around ore stacks/waste rock /rejects as necessary</b>	PC5. Fill out administrative forms as required by the company	
	PC6. Ensure proper Lock out and Tag out scenario to avoid any untoward incident triggered due to unknowingly operation of machine / system under maintenance.	
	PC7. Inform supervisor of any problems while operating the Bulldozer	
	PC8. Ensure that no other operators travel on or stand near the Bulldozer	
<b>Use blade for leveling the surface</b>	PC9. Ensure that walkway rules e.g. operating the Bulldozer within the permissible/allocated areas are followed.	
	PC10. Perform dozing safely on down slopes, near banks and bench edges	
	PC11. Use the correct slings and links	
	PC12. Perform maintenance checks as and when necessary	

## Perform Bulldozer Operations

<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational</b>	The user/individual on the job needs to know and understand:
<b>Context</b> (Knowledge of the company / organization and its processes)	<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. Direct /indirect cost of accidents</p> <p>KA5. cost of delay for the company</p> <p>KA6. Risk and impact of not following company's SOP</p> <p>KA7. Escalation matrix for reporting identified problems</p> <p>KA8. The duties and responsibilities associated with his job role as per the employer</p> <p>KA9. Locally prepared Emergency Preparedness / Disaster Management Plan.</p> <p>Safety guidelines specified by Directorate General of Mine Safety (DGMS))</p> <p>KA10. Different types of mines and detail of the mine he is working in</p> <p>KA11. Mine Organization, time keeping, need for discipline and punctuality</p> <p>KA12. Benching in quarries, Dressing of overhangs, undercuts, fencing, first aid and hygiene</p> <p>KA13. Code of traffic in specific areas of mine. Significance of fences</p> <p>KA14. Standing orders in force at the mine. Safety in the vicinity of machinery</p> <p>KA15. Shot-firing and Safety regulations. How and where to take shelter</p> <p>KA16. Tramways and siding, Haulage rooms, Winding rooms, Boilers, Electrical Gears</p> <p>KA17. Duties of workmen under Mines act</p> <p>KA18. Provision of wages, working hours and accident compensation as per Mines act.</p> <p>KA19. Knowledge of mining safety procedures</p> <p>KA20. Outcome of violation of safely procedures</p> <p>KA21. Precautions to be taken when handling explosives</p> <p>KA22. Environmental impact of mining</p> <p>KA23. Sources of dust, noise and vibration and measures to minimize</p> <p>KA24. 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>

## Perform Bulldozer Operations

<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Controls and switches needed to operate the Bulldozer properly</p> <p>KB2. Basic physics and mechanics involved in using the Bulldozer</p> <p>KB3. Correct operating procedures while using the Bulldozer</p> <p>KB4. Power transmission systems and steering mechanisms</p> <p>KB5. Battery and dynamo connections</p> <p>KB6. Signage and other safety and emergency signals</p> <p>KB7. Guidelines for working in congested places e.g. stock piles, below overhangs.</p> <p>KB8. Response to emergencies e.g. fire</p> <p>KB9. Appropriate size and weight of material that can be transported by the Bulldozer</p> <p>KB10. Safety regulations while operating the Bulldozer</p> <p>KB11. The optimal levels of control indicators e.g. fuel gauge, engine oil pressure and temperature</p> <p>KB12. Any unusual sound emanating from the engine.</p> <p>KB13. Precautions to be observed in the dump-yard.</p>
<p><b>Skills (S)</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Fill out check-list, daily logbooks detailing activities conducted</p> <p>SA2. Fill out administrative forms</p>
	<p><b>Reading Skills</b></p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. Read operators' manual</p> <p>SA4. Read and understand checking/maintenance logbook</p> <p>SA5. Read and comprehend banners /signage</p>
<p><b>B. Professional Skills</b></p>	<p><b>Oral Communication (Listening and Speaking skills)</b></p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA9. discuss task lists, schedules and activities</p> <p>SA10. effectively communicate</p> <p>SA11. attentively listen with full attention and comprehend the information given by various sources about the site</p>
<p><b>B. Professional Skills</b></p>	<p><b>Decision Making</b></p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. make decisions pertaining to the concerned area of work.</p> <p><b>Plan and Organize</b></p>

## Perform Bulldozer Operations

	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> <li>SB2. plan and organize the work order and jobs</li> <li>SB3. organize all process manuals so that sorting/ accessing information is easy</li> </ul>
	<p><b>Customer Centricity</b></p>
	<p>NA</p>
	<p><b>Problem Solving</b></p>
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> <li>SB4. detect problems in day to day tasks</li> <li>SB5. discuss possible solution with the supervisor for problem solving</li> <li>SB6. make decisions in emergency conditions</li> </ul>
	<p><b>Analytical Thinking</b></p>
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> <li>SB7. follow instructions and work on areas of improvement identified</li> <li>SB8. complete the assigned tasks with minimum supervision</li> <li>SB9. complete the job within timelines and quality norms</li> </ul>
<p><b>Critical Thinking</b></p>	
<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> <li>SB10. use common sense and make judgments during day to day basis</li> <li>SB11. use reasoning skills to identify and resolve basic problems</li> <li>SB12. use intuition to detect any potential problems which could arise</li> </ul>	

## Perform Bulldozer Operations

### NOS Version Control

<b>NOS Code</b>	<b>MIN/N 0216</b>		
<b>Credits(NSQF)</b>	TBD	<b>Version number</b>	1.0
<b>Sector</b>	Mining	<b>Drafted on</b>	08/01/2014
<b>Sub-sector</b>	Mining Operation	<b>Last reviewed on</b>	24/03/2014
<b>Occupation</b>	HEMM operations	<b>Next review date</b>	24/03/2017

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# National Occupational Standard



## Overview

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This unit is about reporting and documentation



## out Reporting and Documentation

Unit Title (Task)	
<b>To carry out reporting and documentation</b>	
<b>Description</b>	This unit is about carrying out reporting and documentation
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Reporting of problem/incidents etc.</li> <li>• Reporting and Documentation</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Reporting of problems / incidents</b>	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> <li>PC1. Report problems/incidents as applicable in a timely manner</li> <li>PC2. Report to the appropriate authority as laid down by the employer</li> <li>PC3. Follow reporting procedures as prescribed by the employer</li> </ul>
<b>Reporting and Documentation</b>	<ul style="list-style-type: none"> <li>PC4. Identify documentation to be completed relating to one's role</li> <li>PC5. Record details accurately using the appropriate format</li> <li>PC6. Complete all documentation within stipulated time.</li> <li>PC7. Make sure documents are available to all appropriate authorities to inspect</li> </ul>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (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"> <li>KA1. Types of documentation in organization e.g. daily maintenance checklist and importance of the same</li> <li>KA2. Risk and impact of not following defined procedures/work instructions</li> <li>KA3. Rules and regulations of mine as per standard operating procedure (SOP)</li> <li>KA4. Risk and impact of not following company's SOP</li> <li>KA5. Escalation matrix for reporting identified problems</li> <li>KA6. The duties and responsibilities associated with his job role as per the employer</li> </ul>

## out Reporting and Documentation

	<p>Safety guidelines specified by Directorate General of Mine Safety (DGMS))</p> <p>KA7. Different types of mines and detail of the mine he is working in</p> <p>KA8. Commonly used mining terminology - Benches (width, height etc.), haul roads (width, gradient), stability of slopes, over hang, under cut, high side etc.</p> <p>KA9. Duties of workmen under Mines act</p> <p>KA10. Provision of wages, working hours and accident compensation as per Mines act</p> <p>KA11. Knowledge of mining safety procedures</p> <p>KA12. Outcome of violation of safely procedures</p> <p>KA13. Precautions to be taken when handling heavy equipment.</p>
<b>Skills (S)</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Fill up documentation applicable to one's role</p>
	<b>Reading Skills</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA2. Read English and/or vernacular language with few pauses and a constant speed</p> <p>SA3. Read and understand manuals, health and safety instructions, memos etc</p> <p>SA4. Ability to read from different sources - books, screens in machines, signange</p> <p>SA5. Understand the various color codes, as per standard mining nomenclature</p>
	<b>Oral Communication (Listening and Speaking skills)</b>
<p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. Express statements or information clearly so that others can hear and understand</p> <p>SA7. Participate in and understand the main points of simple discussions</p> <p>SA8. Respond appropriately to any queries</p> <p>SA9. Communicate with supervisor</p>	
<b>A. Professional Skills</b>	<b>Decision Making</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. make decisions pertaining to the concerned area of work.</p>
	<b>Plan and Organize</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB2. plan and organize the work order and jobs</p> <p>SB3. organize all process manuals so that sorting/ accessing information is easy</p>
	<b>Customer Centricity</b>
NA	

## out Reporting and Documentation

	<p><b>Problem Solving</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> <li>SB4. detect problems in day to day tasks</li> <li>SB5. discuss possible solution with the supervisor for problem solving</li> <li>SB6. make decisions in emergency conditions</li> </ul>
	<p><b>Analytical Thinking</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> <li>SB7. follow instructions and work on areas of improvement identified</li> <li>SB8. complete the assigned tasks with minimum supervision</li> <li>SB9. complete the job within timelines and quality norms</li> </ul>
	<p><b>Critical Thinking</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> <li>SB10. use common sense and make judgments during day to day basis</li> <li>SB11. use reasoning skills to identify and resolve basic problems</li> <li>SB12. use intuition to detect any potential problems which could arise</li> </ul>



## NOS Version Control

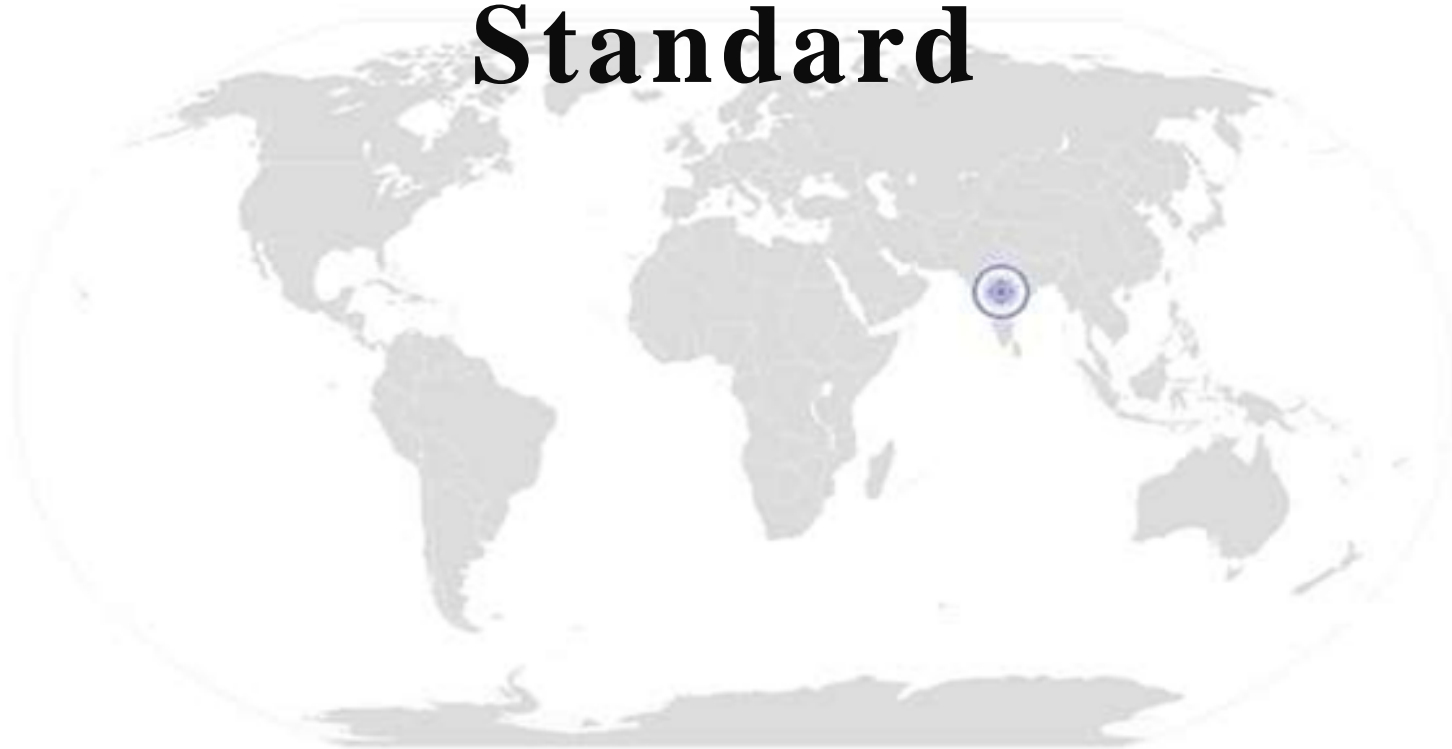
<b>NOS Code</b>	<b>MIN/N 0217</b>		
<b>Credits (NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Mining</b>	<b>Drafted on</b>	<b>08/01/2014</b>
<b>Sub-sector</b>	<b>Mining Operation</b>	<b>Last reviewed on</b>	<b>24/03/2014</b>
<b>Occupation</b>	<b>HEMM operations</b>	<b>Next review date</b>	<b>24/03/2017</b>

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# National Occupational Standard



## Overview

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

<b>Unit Code</b>	<b>MIN/N 0901</b>
<b>Unit Title (Task)</b>	<b>Health and Safety</b>
<b>Description</b>	This unit is about health and safety measures critical in open-cast mines
<b>Scope</b>	This OS unit/task covers the following: <ul style="list-style-type: none"> <li>Health and safety measures critical for mining operations</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
Health and safety measures critical for mining operations	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.</p> <p>PC2. Deal with misfires as per statutory requirement</p> <p>PC3. Comply with safety regulations and procedures in case of fire hazard.</p> <p>PC4. Operate various grades of fire extinguishers.</p> <p>PC5. 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>PC6. Demonstrate careful practices in handling explosives.</p> <p>PC7. Identify characteristics of post-blast fumes and take necessary precautions.</p> <p>PC8. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection</p>

## 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:

- 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. Locally prepared Emergency Preparedness / Disaster Management Plan.
- KA9. Process for reporting any unsafe act/condition in work area which may endanger his or his colleagues life
- KA10. Environmental impact of mining
- KA11. Sources of dust, noise and vibration and measures to minimise
- KA12. Hazardous material safety and security rules and regulations as prescribed by DGMS

## Health and Safety

### NOS Version Control

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

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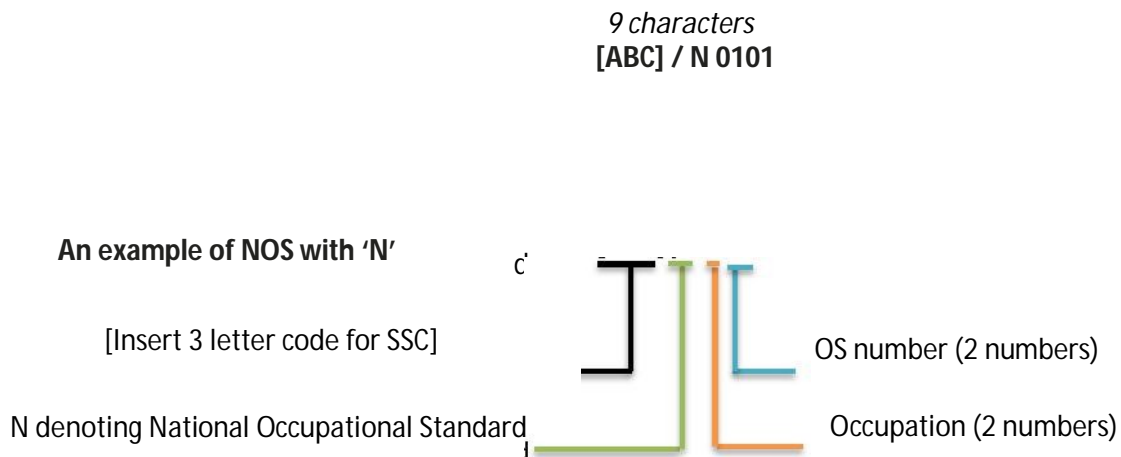


## Nomenclature for QP and NOS units

### Qualifications Pack



### Occupational Standard



### 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 <b>QP</b> or <b>NOS</b>	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

## List of Abbreviations

### 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** Bulldozer Operator

**Qualification Pack** MIN/Q 0205

**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)	Marks Allocation		
			Out Of	Theory	Skills Practical
1. MIN/N 0215 (Prepare Bulldozer)	PC1. Adhere to time limits given by supervisor.	<b>25</b>	1	1	0
	PC2. Check oil levels of engine, transmission, radiator coolant and brake.		2	1	1
	PC3. Check differential and hydraulic oil levels.		2	1	1
	PC4. Check condition of parking brake, main horn, reverse horn, warning lamp and head light.		2	0	2
	PC5. Ensure availability of safety features in Dozers like Audio Visual Alarm, camera, mirrors, Horn, auto fire protection system.		2	1	1
	PC6. Check fan belt tension, electrolyte level and terminal tightness		2	0	2
	PC7. Clean the Bulldozer and outer element of air cleaner with compressed air.		2	0	2

## Qualification Pack for Bulldozer Operator

	PC8. Top up oil in engine, transmission, etc. if necessary after checking		2	0	2
	PC9. Apply grease to all greasing points		2	0	2
	PC10. Drain accumulated water from the diesel tank.		2	0	2
	PC11. Maintain a checking/maintenance logbook to detail all activities conducted before starting the Bulldozer		2	1	1
	PC12. Inform supervisor of those problems that extend beyond scope of one's role		2	1	1
	PC13. Fill out administrative forms as required by the company		2	2	0
		<b>Total</b>	<b>25</b>	<b>7</b>	<b>18</b>
2. MIN/N 0216 (Perform Bulldozer Operations)	PC1. Plan the dozing job before starting the maneuver	<b>30</b>	2	1	1
	PC2. Inspect the site to identify any loose soil, hidden deep trenches or marshy patches where dozer could get stuck.		4	0	4
	PC3. Ensure Bulldozer load and operating speed is within specified limits		3	1	2
	PC4. Adhere to load targets and time limits given by supervisor		4	1	3
	PC5. Fill out administrative forms as required by the company		1	1	0
	PC6. Ensure proper Lock out and Tag out scenario to avoid any untoward incident triggered due to unknowingly operation of machine / system under maintenance.		2	0	2
	PC7. Inform supervisor of any problems while operating the Bulldozer		2	1	1
	PC8. Ensure that no other operators travel on or stand near the Bulldozer		2	0	2
	PC9. Ensure that walkway rules e.g. operating the Bulldozer within the permissible/allocated areas are followed.		2	1	1
	PC10. Perform dozing safely on down slopes, near banks and bench edges		4	2	2
	PC11. Use the correct slings and links		2	1	1

## Qualification Pack for Bulldozer Operator

	PC12. Perform maintenance checks as and when necessary		2	1	1
		<b>Total</b>	<b>30</b>	<b>6</b>	<b>22</b>
3. MIN/N 0217 (Carry Out Reporting and Documentation)	PC1. Report problems/incidents as applicable in a timely manner.	<b>15</b>	3	1	2
	PC2. Report to the appropriate authority as laid down by the employer		3	1	2
	PC3. Follow reporting procedures as prescribed by the employer		2	1	1
	PC4. Identify documentation to be completed relating to one's role		2	0	2
	PC5. Record details accurately using the appropriate format		2	1	1
	PC6. Complete all documentation within stipulated time.		2	1	1
	PC7. Make sure documents are available to all appropriate authorities to inspect		1	1	0
		<b>Total</b>	<b>15</b>	<b>6</b>	<b>9</b>
4. MIN/N 0204 (Health and Safety)	PC1. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.	<b>30</b>	5	2	3
	PC2. Deal with misfires as per statutory requirement		5	1	4
	PC3. Comply with safety regulations and procedures in case of fire hazard.		4	1	3
	PC4. Operate various grades of fire extinguishers.		3	1	2
	PC5. 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		3	0	3
	PC6. Demonstrate careful practices in handling explosives.		5	1	4
	PC7. Identify characteristics of post-blast fumes and take necessary precautions.		2	1	1
	PC8. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection		3	0	3
		<b>Total</b>	<b>30</b>	<b>7</b>	<b>23</b>