NSDA Reference
To be added by NSDA

Application Documentation: Version 2 /16 May, 2015

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Skill Council for Mining Sector (SCMS)
FIMI House, B-311, Okhla Industrial, Phase-1
New Delhi-110020

Name and contact details of individual dealing with the submission

Name: A. K. Bhandari

Position in the organisation: Chief Executive Officer

Address if different from above

Same as above

Tel number(s): +91-11-26814593

E-mail address: scms@skillcms.in

List of documents submitted in support of the Qualifications File

1. Sector Profiling
2. Occupational Map & Progression matrix
3. Protocol for Affiliation of Assessment Bodies and Assessment Framework
4. List of Companies which participated in the NOS development process including validation
5. Validation of Occupational Standards by Industry
6. Putting up the Occupational Standards in public view and declaration of Standard as NOS
7. Recommendation from QRC

1. QUALIFICATION FILE SUMMARY

Qualification Type	
Qualification Title	HEMM Mechanic
Classification code	MIN/Q 0433
Body/bodies which will assess candidates	SCMS affiliated Assessment Agency
Body/bodies which will award the certificate for the qualification.	SCMS
Body which will accredit providers to offer the qualification.	SCMS
Occupation(s) to which the qualification gives access	Has been developed following all guidelines laid down by NSDC for NOS and Qualification Pack development. Has been validated by 30 Employers.
Occupation(s) to which the qualification gives access	Open Cast and Underground
Proposed level of the qualification in the NSQF.	Level 4
Anticipated volume of training/learning required to complete the qualification.	120 hours
Entry requirements / recommendations.	Preferable ITI (Motor Vehicle Mechanic), 1 year of Experience
Minimum Job Entry Age	+ 18 Years
Progression from the qualification.	Overman / Foreman – Shift Mechanical Engineer Level 6
Planned arrangements for RPL.	RPL arrangements and policies are in process
International recognitions.	In progress

Formal structure of the qualification

Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
MIN/N 0491 (Diagnose HEMM for repair requirements)	Mandatory	120 hours	4
MIN/N 0492 (Carry out service, repair and maintenance activities)			
MIN / N 0901 (Health and Safety)			

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum or Qualification Pack.

Give details of the document here: HEMM Mechanic

SECTION 1

ASSESSMENT

Name of assessment body:
If there will be more than one assessment body for this qualification, give details.

1. **Anant Learning and Development, New Delhi**
2. **Navriti Technologies Private limited, Bangalore**
3. **Aspiring minds, New Delhi**
4. **Trendsetters Skill Assessors Pvt. Ltd.**

Will the assessment body be responsible for RPL assessment?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

Please attach any documents giving further information about assessment and/or RPL.
Give details of the document(s) here: Protocol Document and RPL Assessment Document

ASSESSMENT POLICY

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

The emphasis is on practical demonstration of skills and knowledge based on the performance criteria. The assessment papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performance and assessment criteria mentioned in the Qualification Pack. The assessments papers are also checked for the various outcome based parameters such as quality, time taken, precision, tools & equipment requirement etc.

The assessment results are backed by evidences collected by assessors.

1. The assessor needs to collect a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In-charge / Head of the Training Centre.
2. The assessor needs to verify the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate and cross verify trainee's credentials in the enrolment form.
3. The assessor needs to punch the trainee's roll number on all the test pieces.
4. The assessor can take a photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.
5. The assessor also needs to carry a photo ID card.

The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.

Detail any particular arrangements relating to candidates with disabilities or other special needs:
Based on the requirement, the candidates with disabilities or other special needs can be exempted

from written/viva test and the same will be facilitated by assessor through best possible alternative means.

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as listed in the entry on the structure of the qualification on page 1.

Title of NOS/Unit/Component:

CRITERIA FOR ASSESSMENT OF TRAINEES

HEMM Mechanic

MIN/Q 0433

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 centre (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre 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

				Marks Allocation	
Assessable Outcome	**Assessment criteria**	**Total Mark (100)**	**Out Of**	**Theory**	**Skills Practical**
1. MIN/N 0491(Diagnose HEMM for repair requirements)	PC1. Conduct s cheduled, routine examination methods and assessments against vehiclespecifications to identify damage, corrosion, inadequate fluid levels, leaks, wear, securityproblems and general condition and serviceability.	**35**	4	2	2

	PC2. Review complaint sheet and understand repair requirements		3	2	1
	PC3. Understand original equipment manufacturers' specifications and follow standard operating procedure set out for diagnosing faults.		3	2	1
	PC4. Use diagnostic procedures as defined in the troubleshooting checklist prepared by the equipment manufacturer.		3	2	1
	PC5. Use diagnostic tools as required to assess the problem, this includes using on board diagnostic computer to attain vehicle data and compare the same with standard output to detect faults in the system.		3	1.5	1.5
	PC6. check and make adjustments to clearances, gaps, settings, alignment, pressures, tension,speeds and levels relevant to the engine area, transmission area, chassis area, electrical areaand body (including to valves, ignition, fuel and emissions, brakes, transmission, lights, tyres,steering and body fittings).		3	1.5	1.5
	PC7. Check routine service components and materials, including filters, drive,belts, wiper blades, brake linings and pads, lubricants and fluids.		3	1.5	1.5
	PC8. recognise cosmetic damage to vehicle components and units outside normal service items.		3	1.5	1.5

	PC9. Check lubricant levels and identify codes and grades of lubricants to be used for specific components of HEMM.		3	1.5	1.5
	PC10. Dismantle specific components and assemblies to identify faults		4	2	2
	PC11. Report malfunctions or repair requirements observed in vehicles beyond what is mentioned in the complaint sheet.		3	1.5	1.5
		Total	**35**	**19**	**16**
2. MIN/N 0492(Carry out service, repair and maintenance activities)	PC1. ensure OEM recommended procedure and checklist is followed for routine servicing.	**35**	5	3	2
	PC2. in case of non-routine service or repair, confirm tasks to be carried out with superior.		5	3	2
	PC3. Ensure that the correct spare parts, lubricants, tools and other materials required have been obtained.		5	3	2
	PC4. calibrate, align and adjust settings, alignment, pressures, tension, speeds and levels relevant to: • engine and aggregates • transmission system • load bearing arms and structure • Safety devices and components installed • electrical and electronic components • other components (including to valves, ignition, fuel and emissions, brakes,		5	3	2

	transmission, lights, tyres, steering and body fittings).				
	PC5. Identify and change components requiring change due to continuous wear and tear including: • oil and air filters • drive belts • braking system • drive		5	3	2
	PC6. ensure disposal of materials in accordance with the organization's policies.		5	3	2
	PC7. refill correct grade of coolants, lubricants and other fluids as per OEM.		5	3	2
		Total	**35**	**21**	**14**
3. MIN / N 0901 (Health and Safety)	PC1. Comply with occupational health and safety regulations adopted by the employer.	**30**	3	2	1
	PC2. Follow mining operations procedures with respect to materials handling and accidents.		3	2	1
	PC3. Follow the correct safety steps in case of accident or major failure .		3	2	1
	PC4. Comply with safety regulations and procedures in case of fire hazard.		3	2	1
	PC5. Operate various grades of fire extinguishers.		3	2	1
	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		2	1.5	0.5

	public.				
	PC7. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.		2	1.5	0.5
	PC8. Deal with misfires as per statutory requirement.		2	1	1
	PC9. Identify characteristics of post-blast fumes and take necessary precautions.		3	2	1
	PC10. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection.		3	2	1
	PC11. Follow the manufacturer's instructions for care and safe operation of the equipment.		3	2	1
		Total	**30**	**20**	**10**

SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed? **Feedback from industry was collected with respect to roles for which qualification packs development was to be prioritized.**
What is the estimated uptake of this qualification and what is the basis of this estimate? • **Skills Gap analysis Reports for industry demand** • **Training duration and current and potential capacity envisaged for potential supply**
What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF? • **NSDC list of Approved and Under-Development QPs was checked prior to commissioning the work** • **NSDC QRC team also confirmed the same**
What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? • **In depth understand of minimum requisites to perform in a Job role**

• **Companies included in the research represents pan India.** • **Language of the QP is gender neutral, and no religion or such terminology is referred to in the entire documentation and development process.**
Has the qualification been through a formal approval procedure(s)? (If so, explain the process and the outcome.) **Yes, NSDC QRC process was adhered to. This included minimum 30 validations for the QP from employers in the sector. This was across small, medium and large companies.**
What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? • **Feedback from the Industry and Industry Association** • **Recommendation and suggestions from the Industry Player and Industry Association**
What arrangements are in place to inform people about the qualification(s) and the advantages it offers? • **Employer workshops for buy-in and recognition** • **Training centres are being enrolled and informed of the potential** • **Counselling sessions by training provider for potential recruits are being encouraged**

Please attach any documents giving further information about any of the topics above.
Give details of the document(s) here:

SECTION 3

SUMMARY EVIDENCE OF LEVEL

HEMM Mechanic - MIN/Q 0433					
Process required	**Professional Knowledge**	**Professional Skills**	**Core Skills**	**Responsibility**	**Level**
This job diagnoses, repairs, overhauls and services Heavy Earth Moving Machinery (HEMM) to keep them in good running order. Also carries out repairs of internal combustion engines .	Basic Technology and functioning of critical components of a vehicle like engine, fuel systems, cooling systems, exhaust, transmission, drivetrain, suspension, braking systems, electrical and mechanical systems, hydraulics, electronic control unit (ECU), etc. Type and quality of lubricants and various replacement parts such as seals, fittings, joints, fasteners, gaskets, etc. Technique of maintenance of vehicle against OEM specifications for damage corrosion, wear and tear, fluid levels, etc. and adjust settings, alignments, pressure, tension, speed and levels of engine, transmission, drivetrain, braking systems, etc.	Understand original equipment manufacturers' specifications and follow standard operating procedure set out for diagnosing faults. Conduct servicing and repairs by calibrating, aligning and adjusting the settings, pressures, tension, speeds and levels relevant to various HEMM equipment like engine and aggregates, transmission system, load bearing arms and structure, safety devices, other components like valves, fuel and emissions, brakes, transmission, lights, tyres, steering and body fittings etc	Check routine service components and materials and dismantle specific components and assemblies to identify faults . Use diagnostic procedures and tools as required to assess problems like board diagnostic computer to attain vehicle data and compare the same with standard output to detect faults in the system. Check coolants, lubricants and other fluids for optimum quantity and quality and identify codes and grades of lubricants to be used for specific components of HEMM; Refill the same, wherever necessary.	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 performing this role. He must also demonstrate strong work ethics, an ability to communicate courteously with co-workers.	4
4	4	4	4	4	4

Summary of Direct Evidence (from learning outcomes):

Skills required to fulfilling roles and responsibilities along with activities matched with NSQF Level 4

Summary of other evidence (if used):

Accepted by QRC, vetted by Industry

QUALIFICATION FILE SECTION 5

EVIDENCE OF RECOGNITION AND PROGRESSION

In the course of the research and/or development was there any direct evidence that the qualification(s) will be recognised by particular bodies – eg for entry to work or further study? • **Endorsed and accepted by the Industry players** • **Formal recognition from the Industry players**
List any agreements which have been reached with regulatory bodies on recognition. **Benchmarked and moderated skill recognition based on DGMS guidelines and international best practices.**
What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector? **Horizontal and vertical mobility options are available.**

Please attach any documents giving further information about any of the topics above.
Give details of the document(s) here:

QUALIFICATION FILE SECTION 6

EVIDENCE OF INTERNATIONAL COMPARABILITY

List any comparisons which have been established. Under process