



**SGB for the Mining and Minerals Sector**

**SKILLS PROGRAMME  
In**

**Operate Mobile Machinery for Surface Excavation Operations**

**BAND ON THE NATIONAL QUALIFICATIONS FRAMEWORK**

General Education and Training

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Further Education and Training

Yes
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Higher Education and Training

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**PRACTICING PERSON FOOTPRINT**

Practicing person with qualification registered on the NQF

No
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Mandatory licensing

No
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Discretionary licensing

Yes
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Currency of competency

No
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Date 

21 August 2013
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Version 

4
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GENERATION DATE: 09/06/2009	VALIDATION STATUS	
PROGRESS DATE: 21/08/2013	FROM PHASE: 1	TO PHASE: 2

**1. Skills programme Description**

**Operate Mobile Machinery for Surface Excavation Operations**



2.

3. **Registration Number:**

4. **Total Credit Value:** 18

5. **Band on the NQF** FET

6. **Field:** Manufacturing Engineering and Technology

**Sub-Field:** Fabrication and Extraction

7. **Issue Date:**

8. **Review Date:**

**9. Purpose of Skills programme**

People credited with this Skills Programme are able to operate mobile machinery in surface mining and quarrying operations.

**10. Rationale**

There is a need in the industry for people to operate mobile machinery in surface mining and quarrying operations and have expanded skills and knowledge.

**11. Articulation**

This Skills Programme may be the ideal platform for obtaining credits towards a national qualification in the mining discipline and other mining industry related sub-fields.

**12. Learning assumed to be in place**

It is assumed that candidates embarking on learning towards this Skills programme have relevant knowledge and understanding of the surface excavation processes.

**13. Access to the Skills programme**

It is recommended that candidates have addressed the areas reflected under "Learning assumed to be in place" before embarking on learning towards this Skills programme.

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#### 14. Composition of the Skills programme

The following Unit Standards must be achieved

- All the core Unit Standards
- One Unit Standard from either one of the specialisation areas
- One Unit Standard from the General Electives.

##### 14.1 Core Unit Standards

The following Core unit standards for surface excavation operations must be achieved.

U Std Number	Unit Standard Title	Level	Credit	Work Place	Provider	NLRD Nos
	Explain basic health and safety principles in and around the workplace.	2	4	24	16	259639
	Demonstrate knowledge and ability to work in a Surface Mine	2	8	48	32	253025
			12	72	48	

##### 14.2 Specialization Unit Standards Dozing

One of the following unit standards specific to dozing operations for surface excavations must be achieved.

U Std Number	Unit Standard Title	Level	Credit	Work Place	Provider	NLRD Nos
	Doze material using rubber wheel dozer	2	14	110	30	257021
	Use a track dozer to move material	2	14	110	30	257038

##### 14.3 Specialization Unit Standards Drilling

One of the following unit standard specific to drilling operations for surface excavation operations must be achieved.

U Std Number	Unit Standard Title	Level	Credit	Work Place	Provider	NLRD Nos
	Drill blast holes in a surface mining operation	3	15	120	30	257026

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	De-water blast holes using vehicle mounted de-watering pump	2	4	6	34	257040
	Drill medium diameter blast holes using an hydraulic or pneumatic drilling rig and compressor	2	5	45	5	230011
	Drill small diameter blast holes using a percussion drilling rig and compressor	2	5	45	5	230020
	Drill holes for blasting and/or splitting dimension stone blocks using a mechanised drill rig	2	6	50	10	116632
	Drill intersecting holes for diamond wire sawing	2	7	60	10	116658
	Drill holes using Down The Hole Drill	2	6	50	10	11671
	Drill holes using a Small Diameter Rotary Drill not exceeding 170 mm	2	10			11669
	Operate a mechanical core drill	2	1			12912
	Prepare drill string for retrieving gravel	3	13			15309
	Deploy drill string to retrieve gravel	3	17			15263
	Recover drill string	3	13			15310
	Support Drill String operations	2	8			110196
	Support drilling operations in a surface mining context	3	11			115643
	Supervise the process of small bore drilling	3	15			119536
	Repair a rotary drill	2	4			253514
	Prepare and mark off work area for drilling	3	3			257059
	Demonstrate an understanding of drilling techniques	4	5			376199

#### 14.4 Specialisation Unit Standards Excavating

One of the following unit standards specific to excavating operations for surface excavation operations must be achieved.

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U Std Number	Unit Standard Title	Level	Credit	Work Place	Provider	NLRD Nos
	Load material using a face shovel	3	26	230	30	257032
	Excavate and load material using hydraulic excavator	3	26	230	30	257076
	Load material using a Front End Loader	2	16	130	30	257031
	Relocate material using a dragline	3	26	230	30	256996
	Load, haul and dump material using a scraper	2	12	90	30	257035
	Load and offload material using a skid steer loader	2	9	60	30	257034
	Handle dimension stone blocks by means of front end loader	3	13	123	7	116626
	Operate Tractor Loader Backhoe	3	13	100	30	257028

#### 14.2 Specialisation Unit Standards Haul and Dump

The following unit standard specific to haul and dump operations for surface excavations must be achieved.

U Std Number	Unit Standard Title	Level	Credit	Work Place	Provider	NLRD Nos
	Haul and dump material using a haul truck	2	11	80	30	257024

#### 14.3 Specialisation Unit Standards Grader

The following unit standard specific to grader operations for surface excavation operations must be achieved.

U Std Number	Unit Standard Title	Level	Credit	Work Place	Provider	NLRD Nos
	Grade material using a motor grader	3	14	110	30	257115

#### 14.4 Specialisation Unit Standards Services

One of the following services unit standards for surface excavation operations must be achieved

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U Std Number	Unit Standard Title	Level	Credit	Work Place	Provider	NLRD Nos
	Breaking rock using a hydraulic rock breaker	2	13	100	30	256997
	Relocate machines and equipment using a lowbed	2	10	70	30	257018
	Transport material and equipment using a flat back truck	2	10	80	20	257020
	Suppress dust using a water bowser	2	10	80	20	257060
	Transport and distribute explosives using a heavy-duty explosives vehicle	2	2	12	6	257017
	Illuminate an area using a lighting plant	2	2	20		257077
	Deliver compressed air using a mobile electrical compressor	2	4	35	5	256998
	Transport and distribute explosives by means of a light duty explosives vehicle	2	2	12	6	257015
	Transport personnel, material and equipment using Light Delivery Vehicle	2	4	34	6	257025
	De-water blast holes using vehicle mounted de-watering pump	2	4	34	6	257040
	Bar down loose rocks using appropriate equipment	2	4	24	18	257041
	Transport and distribute fuel using a Fuel Bowser	2	4	34	6	257135
	Operate a mixer-placer explosives truck	2	6	50	10	230018
	Load, transport and place explosives components into blast holes using a mixer-placer truck	2	6	50	10	257019
	Move trailing cable using cable-reeler	2	8	60	20	256995
	Remove and replace off-the-road (OTR) wheels and tyres	2	8	80		256176
	Operate a service truck	2	8	70	10	262790

#### 14.5 General Electives

One of the following General unit standards for surface excavation operations must be achieved

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U Std Number	Unit Standard Title	Level	Credit	Work Place	Provider	NLRD Nos
	Demonstrate knowledge and use of hand operated fire fighting equipment	2	4	24	16	13961
	Provide risk-based primary emergency care / first-aid in the workplace	2	5	20	30	120496

Learning programme: Operate Mobile Machinery for Surface Excavation Operations:

Training (notional) Period based on total credit value

18 x 10 = 200 Hours

= 180 hrs / 6hrs/day

= 30 Days

## NOTES

1. *The Skills programme may be achieved in a notional period of 30 days, or 7 weeks. This is based on an assumption of utilising 6 hours of training during any given shift.*
2. *Considering the fact that some learners may progress faster or slower than other learners, it is suggested that a lead and a lag time of 20% be incorporated into the Skills programme. This means that above average learners will possibly complete the Skills programme in 24 days. Learners who perform at a slower rate will possibly complete the Skills programme in 36 days.*
3. *The total (nominal) time allocated for Provider learning (off the job), as a percentage of total time is 40%.*
4. *The total (nominal) time allocated for Workplace Learning (on the job), as a percentage of total time is 60%.*

It is assumed that the application of achieved competencies will be progressive and throughout the Skills programme period.

### 14.6 Practical Experience

Relevant practical experience will be given during the learning phase of this Skills programme.

The assessment of individual unit standards will confirm the required practical experience.

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## 15 Integrated assessment

For awarding recognition for the Skills programme, a candidate must achieve all the unit standards as per item 14.

The assessment criteria in the unit standards are performance-based (applied competence as opposed to required knowledge only). This means that workplace experience may be recognized when awarding credits towards this qualification.

The candidate must demonstrate the ability to effectively engage in operations in an integrative way, dealing with divergent and “random” demands related to the work operations

## 16. Range statements

The unit standards provide the details of the ranges within which the candidate is required to perform.

## 17. Recognition of Prior Learning

This Skills programme can be achieved wholly, or in part, through recognition of prior learning in terms of the criteria laid out in item 13

Evidence can be presented in a variety of forms, including reports, testimonials mentioning functions performed and application of relevant competencies, work records, portfolios, performance records and videos of practice.

All such evidence should be judged according to the general principles of assessment described in the note to assessors in item 18, and with emphasis on currency of evidence.

## 18. Accreditation and Moderation

- 18.1 Providers offering learning towards achievement of any of the unit standards that make up this Skills programme must be accredited through the relevant ETQA by SAQA.
- 18.2 Internal moderation of assessment must take place at the point of assessment with external moderation provided by the relevant ETQA according to the moderation guidelines and the agreed ETQA procedures.
- 18.3 Assessors registered with the relevant ETQA must carry out the assessment of candidates for any of the unit standards that make up this Skills programme.

## 19. Notes

- 19.1 Notes for Assessors:  
Assessors should keep the following general principles in mind when designing and conducting assessments:

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- The aim is to declare the person competent in terms of the Skills programme purpose. Assessment activities should focus on gathering evidence in terms of the main outcomes expressed in the titles of the unit standards, to ensure assessment is integrated rather than fragmented. Where assessment at across titles or at title level is unmanageable, then focus assessment around each specific outcome, or groups of specific outcomes. Take special note of the need for integrated assessment.
- Make sure evidence is gathered across the entire range, wherever it applies. Assessment activities should be as close to the real performance as possible, and where simulations or role-plays are used, there should be supporting evidence to show the candidate is able to perform in the real situation.
- All assessments should be conducted in line with the principles of assessment:

19.2. Principles of assessment:

- **Appropriate:** The method of assessment is suited to the performance being assessed.
- **Fair:** The method of assessment does not present any barriers to achievements, which are not related to the evidence. In particular, the method of assessment is sensitive to language diversity.
- **Manageable:** The methods used make for easily arranged cost-effective assessments that do not unduly interfere with learning.
- **Integration into work or learning:** Evidence collection is integrated into the work or learning process where this is appropriate and feasible.
- **Valid:** The assessment focuses on the requirements laid down in the Standard; i.e. the assessment is fit for purpose.
- **Direct:** The activities in the assessment mirror the conditions of actual performance as closely as possible
- **Authentic:** The assessor is satisfied that the work being assessed is attributable to the person being assessed.
- **Sufficient:** The evidence collected establishes that all criteria have been met and that performance to the required Standard can be repeated consistently.
- **Systematic:** Planning and recording is sufficiently rigorous to ensure that assessment is fair.
- **Open:** Learners can contribute to the planning and accumulation of evidence. Assessment candidates understand the assessment process and the criteria that apply.
- **Consistent:** The same assessor would make the same judgement again in similar circumstances. The judgement made is similar to the judgement that would be made by other assessors.

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