

No. 949

12 October 2007

**SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)**

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

**Mining and Minerals**

registered by Organising Field 06 – Manufacturing, Engineering and Technology, publishes the following Qualification and Unit Standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification and Unit Standards. The full Qualification and Unit Standards can be accessed via the SAQA web-site at [www.saqg.org.za](http://www.saqg.org.za). Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, SAQA House, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the Qualification and Unit Standards should reach SAQA at the address below and **no later than 12 November 2007**. All correspondence should be marked **Standards Setting – Mining and Minerals** and addressed to

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## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**QUALIFICATION:*****National Certificate: Mineral Processing***

<b>SAQA QUAL ID</b>		<b>QUALIFICATION TITLE</b>	
59305		National Certificate: Mineral Processing	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>QUALIFICATION TYPE</b>	<b>FIELD</b>	<b>SUBFIELD</b>	
National Certificate	6 - Manufacturing, Engineering and Technology	Fabrication and Extraction	
<b>ABET BAND</b>	<b>MINIMUM CREDITS</b>	<b>NQF LEVEL</b>	<b>QUAL CLASS</b>
Undefined	129	Level 2	Regular-Unit Stds Based

**PURPOSE AND RATIONALE OF THE QUALIFICATION****Purpose:**

Mineral processing plants are mostly located near rural areas. Many previously disadvantaged individuals from the rural areas are employed to work in these plants. This qualification will help improve their employability, e.g. in smaller mineral processing plants that cannot afford to do their own training as well as benefit the learner through the fundamental knowledge and life skills included in the qualification.

People credited with this qualification are able to:

- Communicate and solve problems effectively in the workplace and a variety of other contexts.
- Demonstrate knowledge of occupational health and safety in the workplace.
- Conduct basic materials handling and transport operations.
- Conduct basic process control operations.
- Perform minor maintenance on mechanical equipment.
- Separate materials by means of filtration, screening or cycloning.

**Rationale:**

Minerals processing is about extracting the valuable minerals contained in the mined ore and producing a saleable product or an enriched concentrate for further processing. It is important to maximise production rate and recovery of the valuable minerals and to minimise the cost of extraction. End products are metals or metal compounds that can be used in a wide variety of applications, e.g.:

- Gold; jewellery, currency, electronic components, dentistry.
- Uranium; fuel for nuclear power stations, nuclear powered ships and submarines, isotopes for instrumentation.
- Base metals; copper and aluminium for conductors, zinc for anti-corrosion coatings, cobalt for paint, lead for battery poles.
- Platinum group metals for jewellery and catalysts.
- Mineral sand products (titanium etc.) for steel hardening, paint pigments and special alloys.

The profit margin in mining operations is low because of low commodity prices and the strong rand. It is therefore necessary to maximise production and recovery and minimise operational

costs to enable a profitable operation. This qualification will ensure that the operating personnel will have the competencies to achieve this.

This qualification will benefit society and the economy by earning foreign currency and producing the necessary products mentioned above for use in the industry.

Learners entering this qualification will be unqualified workstation attendants working under close supervision in Mineral Processing Plants. By obtaining this qualification these learners will be able to work without close supervision at one of several workstations. It will also enable learners to operate plant sections like crushing, screening, milling, leaching, etc. that are all intricate parts of the mineral processing flow line. Exceptional performers could be identified for further development to operator and supervisory levels. Learners could also enter the qualification from similar operations like other metallurgical plants or directly from school.

A typical learning pathway in this field would start with this qualification and proceed to the National certificate, NQF Level 3: Mineral Processing (Gold, Platinum Metals, Uranium, Mineral Sands and Base Metals Extraction) and Supervisory, management and leadership competencies.

### **RECOGNIZE PREVIOUS LEARNING?**

Y

### **LEARNING ASSUMED IN PLACE**

Communication and Mathematical Literacy, NQF Level 1.

Recognition of Prior Learning:

This qualification can be achieved wholly or in part through recognition of prior learning in terms of the criteria laid out above.

Evidence can be presented in a variety of forms, including international or previous local qualifications, reports, testimonials mentioning functions performed, work records, portfolios, videos of practice and performance records.

Access to the Qualification:

Access is open; however it is preferable that learners have completed the GETC: Mining and Minerals Processes (Mineral Processing stream).

### **QUALIFICATION RULES**

Fundamental:

- All 36 credits are compulsory.

Core:

- All 53 credits are compulsory.

Electives:

- 40 Elective credits as specified below must be achieved.

There are five specialisation areas possible:

- A: National Certificate: Mineral processing-Gold.
- B: National Certificate: Mineral processing-Uranium.

- C: National Certificate: Mineral processing-Base Metals.
- D: National Certificate: Mineral processing-Platinum.
- E: National Certificate: Mineral processing-Mineral Sands.

For Specialization Area A: Gold.

The following unit standards (32 credits) must be achieved:

Title; NQF Level; Credits:

- Handle liquid cyanide safely in a mineral processing plant; NQF Level 2; 4 Credits.
- Off-load an alkali into a storage facility; NQF Level 2; 6 Credits.
- Make up inorganic reagents in a metallurgical plant; NQF Level 2; 6 Credits.
- Make up organic reagents in a metallurgical plant; NQF Level 2; 6 Credits.
- Control feed distribution by means of a mobile system; NQF Level 2; 2 Credits.
- Slake lime; NQF Level 2; 4 Credits.
- Control the pH level in a mineral processing process; NQF Level 2; 4 Credits.

Total: 32 Credits.

A further 8 credits are to be chosen from the rest of the electives to make up a minimum of 129 credits for the qualification.

For Specialization Area B: Uranium.

The following unit standards (39 credits) must be achieved:

Title; NQF Level; Credits:

- Handle acids safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Handle inorganic reagents safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Handle organic reagents safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Control the pH level in a mineral processing process; NQF Level 2; 4 Credits.
- Leach metal bearing material in a metallurgical plant; NQF Level 2; 6 Credits.
- Recover uranium from solution by means of chemical precipitation; NQF Level 2; 7 Credits.
- Slake lime; NQF Level 2; 4 Credits.

Total: 39 Credits.

For Specialization Area C: Base metals.

The following unit standards (31 credits) must be achieved:

Title: NQF Level; Credits:

- Off-load organic reagents into a storage facility; NQF Level 2; 4 Credits.
- Handle inorganic reagents safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Control feed distribution by means of a mobile system; NQF Level 2; 2 Credits.
- Control the pH level in a mineral processing process; NQF Level 2; 4 Credits.
- Remove airborne pollutants by means of a scrubber; NQF Level 2; 3 Credits.
- Handle acids safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Perform minor maintenance on metallurgical mechanical equipment; NQF Level 2; 6 Credits.

Total: 31 Credits.

A further 9 credits are to be chosen from the rest of the electives to make up a minimum of 129 credits for the qualification.

For Specialization Area D: Platinum.

The following unit standards (34 credits) must be achieved:

Title; NQF Level; Credits:

- Off-load organic reagents into a storage facility; NQF Level 2; 6 Credits.
- Handle organic reagents safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Handle inorganic reagents safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Control the pH level in a mineral processing process; NQF Level 2; 4 Credits.
- Handle acids safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Perform minor maintenance on metallurgical mechanical equipment; NQF Level 2; 6 Credits.

Total: 34 Credits.

A further 6 credits are to be chosen from the rest of the electives to make up a minimum of 129 credits for the qualification.

For Specialization Area E: Mineral Sands.

The following unit standards (34 credits) must be achieved:

Title; NQF Level; Credits:

- Control feed rate by means of a roll feeder; NQF Level 2; 2 Credits.
- Perform gravity separation in a metallurgical plant; NQF Level 2; 6 Credits.
- Separate material by means of a dry high intensity magnetic separator; NQF Level 2; 4 Credits.
- Separate material by means of a dry electrostatic separator; NQF Level 2; 4 Credits.
- Handle organic reagents safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Handle inorganic reagents safely in a metallurgical plant; NQF Level 2; 6 Credits.
- Perform minor maintenance on metallurgical mechanical equipment; NQF Level 2; 6 Credits.

Total: 34 Credits.

A further 6 credits are to be chosen from the rest of the electives to make up a minimum of 129 credits for the qualification.

### **EXIT LEVEL OUTCOMES**

Range:

- Workplace refers to the Minerals Processing environment.
- Minerals processing context refers to:
  - Gold, Uranium, Base metals, Platinum, Minerals Sands.

1. Communicate and solve problems in the workplace.
2. Demonstrate an understanding of Occupational Health, Safety and Environmental standards in the workplace.
3. Conduct materials handling and transport activities.

4. Conduct process control activities.

5. Perform minor maintenance on mechanical equipment.

Range:

- Minor maintenance refers to maintenance performed by operations personnel not qualified as artisans.

6. Separate materials.

Range:

- Separation techniques include filtration, gravity concentration, screening and/or cycloning.

Consistency of Exit Level Outcomes with Critical Cross field Outcomes.

In accordance with SAQA guidelines, all unit standards include the assessment of relevant critical cross-field outcomes. Consequently, Exit Level Outcomes are consistent with critical cross-field outcome requirements.

The following CCFO's have been addressed in this qualification as per the unit standards outlined in the Annexures.

SAQA Critical Cross-Field Outcomes:

- Identifying and solving problems in which responses display that responsible decisions using critical thinking have been made.
  - Evident to Exit Level Outcomes 1, 2, 3, 4, 5, 6.
- Working effectively with others as a member of a team, group, organization and community.
  - Evident to Exit Level Outcomes 1, 2, 3, 4, 5, 6.
- Organising and managing oneself and one's activities responsibly and effectively.
  - Evident to Exit Level Outcomes 3, 4, 5, 6.
- Collecting, analyzing, organizing and critically evaluating information.
  - Evident to Exit Level Outcomes 3, 4, 5, 6.
- Communicating effectively using visual, mathematical and/or language skills.
  - Evident to Exit Level Outcomes 1, 2, 3, 6.
- Using science and technology effectively and critically, showing responsibility toward the environment and health of others.
  - Evident to Exit Level Outcomes 1, 4, 5, 6.
- Demonstrating an understanding of the world as a set of related systems by recognizing that problem contexts do not exist in isolation.
  - Evident to Exit Level Outcomes 1, 2, 3.

#### **ASSOCIATED ASSESSMENT CRITERIA**

Associated Assessment Criteria for Exit Level Outcome 1:

- Oral communication is maintained and adapted as required to promote effective interaction in a minerals processing context.
- Written communication skills are used effectively in the workplace.

- Mathematical principles and techniques are applied while performing the tasks related to mineral processing activities.
- Mathematical calculations are utilised for the solution of common operational problems.

Associated Assessment Criteria for Exit Level Outcome 2:

- Occupational Health, Safety and environmental principles and practices are understood and applied in the workplace.
- The impact of risks and hazards and the consequences of non-compliance are explained.
- Preventative measures are explained and applied in order to minimise/eliminate risks/hazards in mineral processing activities.
- Hazardous conditions are monitored and reported on a continual basis to ensure the safety and health of persons.

Associated Assessment Criteria for Exit Level Outcome 3:

- Elementary principles affecting the operating performance in materials handling and transport operations are explained within the mineral processing context.
- Operating parameters and factors affecting the materials handling process are identified and explained in accordance with standard plant work practices.
- Materials handling and transport activities are performed in accordance with specified requirements.
- Operating parameters and factors are monitored and controlled in accordance with operating procedures.
- Materials handling and transport activities are recorded and reported on as per accepted procedures.
- Range: Accepted procedures include: Safe work procedures, legal, environmental and manufacturer's requirements.

Associated Assessment Criteria for Exit Level Outcome 4:

- Process control principles are explained in relation to mineral processing.
- Factors affecting process control activities are identified within the minerals processing context.
- Process controlling activities are conducted according to specified requirements.
- Operating parameters are adhered to and the impact of non-adherence is explained in accordance with specified requirements.
- Production results and deviations are reported and logged on a continual basis to meet the data recording requirements.

Associated Assessment Criteria for Exit Level Outcome 5:

- Maintenance requirements are explained and applied in the maintenance of mechanical equipment in a minerals processing plant.
- The purpose and importance of minor maintenance of mechanical equipment is explained and applied in accordance with specified requirements.
- Minor maintenance of mechanical equipment is conducted in accordance with specifications.
- Minor maintenance performed is logged on an operational data sheet.

Associated Assessment Criteria for Exit Level Outcome 6:

- Separation techniques are explained and applied within the mineral processing context.
- Separation methods prescribed are applied within the mineral processing context.
- Separation processes are monitored and controlled within standard operating parameters.

Integrated Assessment:

Integrated assessment at the level of the qualification provides an opportunity for learners to show they are able to integrate concepts, actions and ideas achieved across a range of unit standards and contexts.

Integrated assessment must evaluate the quality of observable performance as well as the thinking behind the performance, and must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions).
- Asking questions and initiating short discussions to test understanding.
- Looking at records and reports in the portfolio and reviewing previous assessments.

In some cases interference will be necessary to determine competence depending on the nature and context within which performance takes place.

It is necessary to ensure that the fundamental part of the qualification is also targeted to ensure that while the competence may have been achieved in a particular context, learners are able to apply it in a range of other contexts and for future learning. The assessment should also ensure that all the critical cross-field outcomes have been achieved.

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process of preparing the learner for assessment and familiarising the learner with the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit-level outcomes. The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities associated with minerals processing.

### **INTERNATIONAL COMPARABILITY**

The proposed qualification was compared to qualifications, and other learning interventions available elsewhere in the world in order to ensure that the qualification structure and unit standards proposed are comparable in terms of level, scope of qualifications and competencies covered.

Information searches were conducted via the Internet and a number of relevant sites were searched from countries such as:

- Russia (a strong emerging economy with well-developed technology).
- Nigeria (one of the strongest economies in Africa).
- Democratic Republic Congo (a country with vast mineral deposits).
- Zambia (part of the SADEC community, a country rich in natural resources).
- Zimbabwe (part of the SADEC community, a country rich in natural resources).
- Tanzania (a developing country with a growing infrastructure).
- Mali (a West African country with a metals/minerals history dating back to well before the 14th century).
- Ghana (a West African country with a well developed education system and strong mining and minerals industry).
- Australia and New Zealand (Both of which have outcomes-based national qualifications systems similar to that of South Africa).
- India (developing into one of the strongest economies in the world and having made massive investments in South Africa).

- Canada (a global leader in the field of minerals extraction and processing).

In some cases (e.g. Mali and Tanzania) no references to Minerals Processing (or Metallurgical) training and/or qualifications could be found.

Ghana:

Although Ghana has access to International Vocational Qualifications through the British Council and City & Guilds Qualifications, a qualification related to metallurgy was not found. However Ghana has 4 universities and offer related education and training at a higher level.

Australia: National Training Information Services ([www.ntis.gov.au](http://www.ntis.gov.au)):

The following programme was found:

- Certificate II in Metalliferous Mining Operations (Processing).
- Numerous competencies from this qualification/programme are within the proposed South African Mining and Minerals SGB qualification.

New Zealand: The New Zealand Qualification Authority ([www.nzqa.gov.nz](http://www.nzqa.gov.nz)):

The following programme was found:

- National Certificate in Extractive Industries (Mineral Processing: Alluvial Gold), NQF Level 4, Credits 216.
- The structure, outcomes and purpose of this qualification compare well with the proposed South African Mining and Minerals SGB qualification.

Searched [www.asminternational.org](http://www.asminternational.org): This organisation runs courses in the USA, Canada as well as the UK.

Found Course "Elements of Metallurgy". The following item is in the course outline:

- Steps in processing common ores to metals.
- Beneficiating and reducing methods.
- Types of furnaces.
- Refractories.

These items could very well form part of the training for the achievement of the proposed Mining and Minerals Sector qualification. However, they are not organised in the same manner as the proposed qualification.

India:

Searched [www.psgtech.edu/departments/metallurgy/India](http://www.psgtech.edu/departments/metallurgy/India).

The courses offered were pitched well above the level of this proposed certificate. The faculty offers degree courses and hence a comparative analysis was not practical.

Searched [www.metallurgicalsolutionsinternational.com/presentations.html](http://www.metallurgicalsolutionsinternational.com/presentations.html).

This organisation runs Practical Metallurgical Solutions courses in various countries all over the world:

- North & South America.

- India.
- China.
- Europe.
- Japan.
- South Korea.

Certain syllabus items from the course outline above may be used in training learners in order for them to achieve the proposed Mining and Minerals Sector qualification.

A general conclusion was that the competencies addressed by the proposed qualification were in line with courses and qualifications from other parts of the world apart from New Zealand and Australia.

### **ARTICULATION OPTIONS**

This qualification allows for both vertical and horizontal articulation.

Vertical articulation exists with:

- ID 49044 National Certificate: Minerals Processing Level 3.

Horizontal articulation exists with:

- ID 49045 National Certificate: Lump Ore Beneficiation Level 2.

### **MODERATION OPTIONS**

- Anyone assessing a learner or moderating the assessment of a learner against the qualification must be registered as an assessor with the relevant Education, Training, Quality, Assurance (ETQA) Body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- Any institution offering learning that will enable the achievement of this qualification must be accredited as a provider with the relevant Education, Training, Quality, Assurance (ETQA) Body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- Assessment and moderation of assessment will be overseen by the relevant Education, Training, Quality, Assurance (ETQA) Body, or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQA's policies and guidelines for assessment and moderation.
- Moderation must include both internal and external moderation of assessments, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described in the associated unit standards.
- Anyone wishing to be assessed against this qualification may apply to be assessed by any assessment agency, assessor or provider institution that is accredited by the relevant ETQA.

### **CRITERIA FOR THE REGISTRATION OF ASSESSORS**

Assessors should be in possession of:

- An appropriate qualification at or above the level of the qualification and preferably relevant workplace practical experience.
- Registration as an assessor with the relevant ETQA.

### **NOTES**

**UNIT STANDARDS**

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119463	Access and use information from texts	Level 2	5
Fundamental	9009	Apply basic knowledge of statistics and probability to influence the use of data and procedures in order to investigate life related problems	Level 2	3
Fundamental	7480	Demonstrate understanding of rational and irrational numbers and number systems	Level 2	3
Fundamental	119454	Maintain and adapt oral/signed communication	Level 2	5
Fundamental	12444	Measure, estimate and calculate physical quantities and explore, describe and represent geometrical relationships in 2-dimensions in different life or workplace contexts	Level 2	3
Fundamental	119460	Use language and communication in occupational learning programmes	Level 2	5
Fundamental	7469	Use mathematics to investigate and monitor the financial aspects of personal and community life	Level 2	2
Fundamental	9007	Work with a range of patterns and functions and solve problems	Level 2	5
Fundamental	119456	Write/present for a defined context	Level 2	5
Core	252318	Demonstrate knowledge of the various activities related to the processing of minerals	Level 1	14
Core	115101	Address workplace hazards and risks	Level 2	4
Core	116520	Apply safety, health and environmental principles and procedures in a workplace	Level 2	2
Core	252284	Classify material in a metallurgical plant	Level 2	6
Core	252330	Control feed rate by means of a feeder	Level 2	2
Core	243650	Handle waste material in a metallurgical plant	Level 2	4
Core	12483	Perform basic first aid	Level 2	4
Core	252315	Perform size separation in a metallurgical plant	Level 2	6
Core	252282	Thicken slurry in a metallurgical plant	Level 2	4
Core	252295	Transfer fluids by means of a pump	Level 2	3
Core	252324	Transfer material by means of a belt conveyor	Level 2	4
Elective	14656	Demonstrate an understanding of sexuality and sexually transmitted infections including HIV/AIDS	Level 1	5
Elective	252325	Hand sort material	Level 1	2
Elective	252313	Centrifuge a slurry in a metallurgical plant	Level 2	6
Elective	252351	Classify material by means of a winnower	Level 2	5
Elective	252306	Control feed distribution by means of a mobile system	Level 2	2
Elective	252329	Control the pH level in a metallurgical process	Level 2	4
Elective	252304	Control the water reticulation in a metallurgical process	Level 2	4
Elective	252347	Convey material by means a bucket elevator	Level 2	4
Elective	252340	De-water material by means of a de-watering screen	Level 2	2
Elective	252354	De-water material by means of a vibrating screen	Level 2	2
Elective	252285	Deposit tailings onto a tailings dam	Level 2	7
Elective	252293	Deposit waste rock onto a waste dump by means of a belt conveyor system	Level 2	3
Elective	252350	Determine relative density by means of a density scale	Level 2	3
Elective	252326	Dispatch base metals	Level 2	4
Elective	252336	Dispatch bullion	Level 2	4
Elective	252333	Dispatch metallurgical process by-products	Level 2	4
Elective	252283	Filter liquids from solids in a metallurgical plant	Level 2	7
Elective	252314	Filter material in a metallurgical plant	Level 2	7
Elective	252349	Generate compressed air	Level 2	3
Elective	252320	Generate steam by means of an electric boiler	Level 2	2
Elective	252334	Granulate a precious metal	Level 2	2
Elective	252335	Handle acids safely in a metallurgical plant	Level 2	6
Elective	252310	Handle bulk oxygen safely in a metallurgical plant	Level 2	4
Elective	252321	Handle cyanide solids safely in a metallurgical plant	Level 2	4
Elective	252302	Handle inorganic reagents safely in a metallurgical plant	Level 2	6
Elective	252337	Handle liquid cyanide safely in a metallurgical plant	Level 2	4
Elective	252286	Handle organic reagents safely in a metallurgical plant	Level 2	6
Elective	252353	Load carbon from a storage facility into a road tanker	Level 2	6
Elective	252352	Load sulphuric acid from a bulk storage facility into a tanker	Level 2	4
Elective	252328	Load uranium slurry from a bulk storage facility into a tanker	Level 2	4

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	252309	Maintain steel ball load in a mill by means of a suspended magnetic loading system	Level 2	3
Elective	252327	Make up inorganic reagents in a metallurgical plant	Level 2	6
Elective	252312	Make up organic reagents in a metallurgical plant	Level 2	6
Elective	252287	Make-up an ammonia solution in a metallurgical plant	Level 2	4
Elective	252344	Neutralize solution for final processing	Level 2	3
Elective	252322	Off-load acid from a tanker into a storage facility	Level 2	6
Elective	252316	Off-load an alkali into a storage facility	Level 2	6
Elective	252311	Off-load carbon from a tanker into a storage facility	Level 2	6
Elective	252319	Off-load cyanide from a tanker into a bulk storage facility	Level 2	7
Elective	252289	Off-load liquefied gas into a storage facility	Level 2	6
Elective	252356	Off-load ore from a rail truck into a storage facility	Level 2	2
Elective	252317	Off-load organic reagents into a storage facility	Level 2	6
Elective	252355	Off-load pulp from a tanker into a storage facility	Level 2	2
Elective	252341	Perform gravity concentration in a metallurgical plant	Level 2	6
Elective	252338	Perform minor mechanical maintenance on metallurgical process equipment	Level 2	6
Elective	252299	Produce backfill from waste slurry	Level 2	6
Elective	252308	Produce briquettes from fine material	Level 2	5
Elective	252346	Recover gold from solution by means of chemical precipitation	Level 2	4
Elective	252343	Recover metal by means of centrifugal concentration	Level 2	3
Elective	252342	Regenerate organic solvent	Level 2	4
Elective	252348	Regenerate resin	Level 2	4
Elective	252331	Remove airborne dust by means of a bag filter	Level 2	3
Elective	252280	Remove airborne pollutants by means of a scrubber	Level 2	3
Elective	252305	Remove ferromagnetic material from a belt conveyor by means of an over-belt magnet	Level 2	2
Elective	252357	Remove impurities from carbon by means of acid treatment	Level 2	6
Elective	252323	Replace medium in a fluidised bed roaster	Level 2	3
Elective	252332	Slake lime	Level 2	4
Elective	252298	Strip base metals from titanium blanks in an electro-winning process	Level 2	4
Elective	252345	Transport material by means a screw conveyor	Level 2	4
Elective	252339	Wash material by means of a rotary scrubber	Level 2	2
Elective	252301	Separate material by means of a dry high intensity magnetic separator	Level 3	3
Elective	252307	Separate material by means of an electrostatic separator	Level 3	3



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Transfer fluids by means of a pump*

SAQA US ID	UNIT STANDARD TITLE		
252295	Transfer fluids by means of a pump		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the transfer of fluids.

**SPECIFIC OUTCOME 2**

Prepare to transfer fluids.

**SPECIFIC OUTCOME 3**

Transfer fluids.

**SPECIFIC OUTCOME 4**

Complete duties pertaining to the transfer process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Perform size separation in a metallurgical plant***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252315		Perform size separation in a metallurgical plant	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to size separation.

**SPECIFIC OUTCOME 2**

Prepare to separate material.

**SPECIFIC OUTCOME 3**

Perform size separation.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the size separation process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Core	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Thicken slurry in a metallurgical plant*

SAQA US ID	UNIT STANDARD TITLE		
252282	Thicken slurry in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the thickening process.

**SPECIFIC OUTCOME 2**

Prepare to thicken slurry.

**SPECIFIC OUTCOME 3**

Thicken slurry.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the thickening process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Classify material in a metallurgical plant*

SAQA US ID		UNIT STANDARD TITLE	
252284		Classify material in a metallurgical plant	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to classification.

**SPECIFIC OUTCOME 2**

Prepare to classify material.

**SPECIFIC OUTCOME 3**

Perform classification.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the classification process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:**

***Demonstrate knowledge of the various activities related to the processing of minerals***

SAQA US ID	UNIT STANDARD TITLE		
252318	Demonstrate knowledge of the various activities related to the processing of minerals		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 1	14

**SPECIFIC OUTCOME 1**

Demonstrate knowledge of the size reduction processes (comminution) in a metallurgical plant.

**SPECIFIC OUTCOME 2**

Demonstrate knowledge of the classification processes in a metallurgical plant.

**SPECIFIC OUTCOME 3**

Demonstrate knowledge of the beneficiation processes in a metallurgical plant.

**SPECIFIC OUTCOME 4**

Demonstrate knowledge of the chemical processing techniques (hydro) in a metallurgical plant.

**SPECIFIC OUTCOME 5**

Demonstrate knowledge of the dewatering processes in a metallurgical plant.

**SPECIFIC OUTCOME 6**

Demonstrate knowledge of the high temperature metallurgical processes (pyro) in a metallurgical plant.

**SPECIFIC OUTCOME 7**

Demonstrate knowledge of the refining processes in a metallurgical plant.

**SPECIFIC OUTCOME 8**

Demonstrate knowledge of the materials transport processes in a metallurgical plant.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Transfer material by means of a belt conveyor***

SAQA US ID		UNIT STANDARD TITLE	
252324		Transfer material by means of a belt conveyor	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the transfer of material.

**SPECIFIC OUTCOME 2**

Prepare to transfer material.

**SPECIFIC OUTCOME 3**

Transfer material.

**SPECIFIC OUTCOME 4**

Complete duties pertaining to the material transfer process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Control feed rate by means of a feeder*

SAQA US ID	UNIT STANDARD TITLE		
252330	Control feed rate by means of a feeder		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the control of the feed rate of material.

**SPECIFIC OUTCOME 2**

Prepare to control the feed rate.

**SPECIFIC OUTCOME 3**

Control the feed rate.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the controlling of the feed rate.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Remove airborne pollutants by means of a scrubber*

SAQA US ID		UNIT STANDARD TITLE	
252280		Remove airborne pollutants by means of a scrubber	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the scrubbing process.

**SPECIFIC OUTCOME 2**

Prepare to scrub airborne pollutants.

**SPECIFIC OUTCOME 3**

Scrub airborne pollutants.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the scrubbing process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Filter liquids from solids in a metallurgical plant***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252283		Filter liquids from solids in a metallurgical plant	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	7

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the filtration of liquids from solids.

**SPECIFIC OUTCOME 2**

Prepare to filter liquids from solids.

**SPECIFIC OUTCOME 3**

Filter liquids from solids.

**SPECIFIC OUTCOME 4**

Complete duties pertaining to the filtration process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Deposit tailings onto a tailings dam***

SAQA US ID		UNIT STANDARD TITLE	
252285		Deposit tailings onto a tailings dam	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	7

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the deposition of tailings.

**SPECIFIC OUTCOME 2**

Prepare to deposit tailings.

**SPECIFIC OUTCOME 3**

Deposit tailings.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the deposition of tailings.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Handle organic reagents safely in a metallurgical plant***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252286		Handle organic reagents safely in a metallurgical plant	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the handling of organic reagents.

**SPECIFIC OUTCOME 2**

Prepare to handle organic reagents.

**SPECIFIC OUTCOME 3**

Handle organic reagents.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the organic reagents handling process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Make-up an ammonia solution in a metallurgical plant***

SAQA US ID		UNIT STANDARD TITLE	
252287		Make-up an ammonia solution in a metallurgical plant	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the making up of an ammonia solution.

**SPECIFIC OUTCOME 2**

Prepare to make-up an ammonia solution.

**SPECIFIC OUTCOME 3**

Make-up an ammonia solution.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the making up of an ammonia solution.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Off-load liquefied gas into a storage facility***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252289		Off-load liquefied gas into a storage facility	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the off-loading of liquefied gas.

**SPECIFIC OUTCOME 2**

Prepare to off-load liquefied gas.

**SPECIFIC OUTCOME 3**

Off-load liquefied gas.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the off-loading of liquefied gas.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Deposit waste rock onto a waste dump by means of a belt conveyor system***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252293		Deposit waste rock onto a waste dump by means of a belt conveyor system	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the deposition of waste rock.

**SPECIFIC OUTCOME 2**

Prepare to deposit waste rock.

**SPECIFIC OUTCOME 3**

Deposit waste rock.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the deposition of waste rock.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Strip base metals from titanium blanks in an electro-winning process***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252298		Strip base metals from titanium blanks in an electro-winning process	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the stripping of base metals from titanium blanks.

**SPECIFIC OUTCOME 2**

Prepare to strip base metals.

**SPECIFIC OUTCOME 3**

Strip base metals.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the stripping of base metals.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Produce backfill from waste slurry***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252299		Produce backfill from waste slurry	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the backfill production process.

**SPECIFIC OUTCOME 2**

Prepare to produce backfill.

**SPECIFIC OUTCOME 3**

Produce backfill.

**SPECIFIC OUTCOME 4**

Complete duties pertaining to the backfill production process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Separate material by means of a dry high intensity magnetic separator***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252301	Separate material by means of a dry high intensity magnetic separator		
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 3	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the separation process.

**SPECIFIC OUTCOME 2**

Prepare to separate material.

**SPECIFIC OUTCOME 3**

Separate material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the separation process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Handle inorganic reagents safely in a metallurgical plant***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252302	Handle inorganic reagents safely in a metallurgical plant		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the handling of inorganic reagents.

**SPECIFIC OUTCOME 2**

Prepare to handle inorganic reagents.

**SPECIFIC OUTCOME 3**

Handle inorganic reagents.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the inorganic reagents handling process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:****Control the water reticulation in a metallurgical process**

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252304	Control the water reticulation in a metallurgical process		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the control of the water reticulation system.

**SPECIFIC OUTCOME 2**

Prepare to control the water reticulation system.

**SPECIFIC OUTCOME 3**

Control the water reticulation system.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the controlling of the water reticulation system.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:**

***Remove ferromagnetic material from a belt conveyor by means of an over-belt magnet***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252305	Remove ferromagnetic material from a belt conveyor by means of an over-belt magnet		
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the removal process.

**SPECIFIC OUTCOME 2**

Prepare to remove material.

**SPECIFIC OUTCOME 3**

Remove material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the removal process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Control feed distribution by means of a mobile system***

SAQA US ID		UNIT STANDARD TITLE	
252306		Control feed distribution by means of a mobile system	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the distribution of feed.

**SPECIFIC OUTCOME 2**

Prepare to distribute feed.

**SPECIFIC OUTCOME 3**

Distribute feed.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the distribution of feed.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Separate material by means of an electrostatic separator*

SAQA US ID		UNIT STANDARD TITLE	
252307		Separate material by means of an electrostatic separator	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the separation process.

**SPECIFIC OUTCOME 2**

Prepare to separate material.

**SPECIFIC OUTCOME 3**

Separate material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the separation process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Produce briquettes from fine material***

SAQA US ID		UNIT STANDARD TITLE	
252308		Produce briquettes from fine material	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	5

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the briquetting process.

**SPECIFIC OUTCOME 2**

Prepare to produce briquettes.

**SPECIFIC OUTCOME 3**

Produce briquettes.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the briquetting process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:**

***Maintain steel ball load in a mill by means of a suspended magnetic loading system***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252309	Maintain steel ball load in a mill by means of a suspended magnetic loading system		
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the maintaining of steel ball load.

**SPECIFIC OUTCOME 2**

Prepare to load steel balls.

**SPECIFIC OUTCOME 3**

Load steel balls.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the steel ball loading operation.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:***Handle bulk oxygen safely in a metallurgical plant*

SAQA US ID		UNIT STANDARD TITLE	
252310		Handle bulk oxygen safely in a metallurgical plant	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the handling of bulk oxygen.

**SPECIFIC OUTCOME 2**

Prepare to handle bulk oxygen.

**SPECIFIC OUTCOME 3**

Handle bulk oxygen.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the handling of bulk oxygen.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Off-load carbon from a tanker into a storage facility*

SAQA US ID		UNIT STANDARD TITLE	
252311		Off-load carbon from a tanker into a storage facility	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the off-loading of carbon.

**SPECIFIC OUTCOME 2**

Prepare to off-load carbon.

**SPECIFIC OUTCOME 3**

Off-load carbon.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the carbon off-loading process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Make up organic reagents in a metallurgical plant*

SAQA US ID	UNIT STANDARD TITLE		
252312	Make up organic reagents in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the making up of organic reagents.

**SPECIFIC OUTCOME 2**

Prepare to make up organic reagents.

**SPECIFIC OUTCOME 3**

Make up organic reagents.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the making up of organic reagents.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Centrifuge a slurry in a metallurgical plant***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252313		Centrifuge a slurry in a metallurgical plant	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the centrifuging process.

**SPECIFIC OUTCOME 2**

Prepare to centrifuge material.

**SPECIFIC OUTCOME 3**

Centrifuge material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the centrifuging process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Filter material in a metallurgical plant***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252314		Filter material in a metallurgical plant	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	7

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the filtration of material.

**SPECIFIC OUTCOME 2**

Prepare to filter material.

**SPECIFIC OUTCOME 3**

Filter material.

**SPECIFIC OUTCOME 4**

Complete duties pertaining to the filtration process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Off-load an alkali into a storage facility***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252316	Off-load an alkali into a storage facility		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the off-loading of alkalis.

**SPECIFIC OUTCOME 2**

Prepare to off-load alkalis.

**SPECIFIC OUTCOME 3**

Off-load alkalis.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the off-loading of alkalis.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Off-load organic reagents into a storage facility***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252317		Off-load organic reagents into a storage facility	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the off-loading of organic reagents.

**SPECIFIC OUTCOME 2**

Prepare to off-load organic reagents.

**SPECIFIC OUTCOME 3**

Off-load organic reagents.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the off-loading of organic reagents.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Off-load cyanide from a tanker into a bulk storage facility***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252319		Off-load cyanide from a tanker into a bulk storage facility	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	7

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the off-loading of cyanide.

**SPECIFIC OUTCOME 2**

Prepare to off-load cyanide.

**SPECIFIC OUTCOME 3**

Off-load cyanide.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the off-loading process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:***Generate steam by means of an electric boiler*

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252320	Generate steam by means of an electric boiler		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the generation of steam.

**SPECIFIC OUTCOME 2**

Prepare to generate steam.

**SPECIFIC OUTCOME 3**

Generate steam.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the steam generation process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Handle cyanide solids safely in a metallurgical plant*

SAQA US ID	UNIT STANDARD TITLE		
252321	Handle cyanide solids safely in a metallurgical plant		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the handling of cyanide solids.

**SPECIFIC OUTCOME 2**

Prepare to handle cyanide solids.

**SPECIFIC OUTCOME 3**

Handle cyanide solids.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to cyanide handling.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Off-load acid from a tanker into a storage facility***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252322		Off-load acid from a tanker into a storage facility	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the off-loading of acid.

**SPECIFIC OUTCOME 2**

Prepare to off-load acid.

**SPECIFIC OUTCOME 3**

Off-load acid.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the acid off-loading process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Replace medium in a fluidised bed roaster***

SAQA US ID		UNIT STANDARD TITLE	
252323		Replace medium in a fluidised bed roaster	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the replacement of medium.

**SPECIFIC OUTCOME 2**

Determine medium replacement requirements.

**SPECIFIC OUTCOME 3**

Prepare to load medium.

**SPECIFIC OUTCOME 4**

Replace medium.

**SPECIFIC OUTCOME 5**

Complete the duties relating to the replacement of medium.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:****Hand sort material**

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252325	Hand sort material		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 1	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the hand sorting of material.

**SPECIFIC OUTCOME 2**

Hand sort material.

**SPECIFIC OUTCOME 3**

Complete the duties pertaining to the hand sorting of material.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Dispatch base metals***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252326		Dispatch base metals	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the dispatch process.

**SPECIFIC OUTCOME 2**

Prepare to dispatch base metals.

**SPECIFIC OUTCOME 3**

Dispatch base metals.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the dispatch process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Make up inorganic reagents in a metallurgical plant*

SAQA US ID	UNIT STANDARD TITLE		
252327	Make up inorganic reagents in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the making up of inorganic reagents.

**SPECIFIC OUTCOME 2**

Prepare to make up inorganic reagents.

**SPECIFIC OUTCOME 3**

Make up inorganic reagents.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the making up of inorganic reagents.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Load uranium slurry from a bulk storage facility into a tanker***

SAQA US ID	UNIT STANDARD TITLE		
252328	Load uranium slurry from a bulk storage facility into a tanker		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the loading of uranium slurry.

**SPECIFIC OUTCOME 2**

Prepare to load uranium slurry.

**SPECIFIC OUTCOME 3**

Load uranium slurry.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the loading process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Control the pH level in a metallurgical process***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252329	Control the pH level in a metallurgical process		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the controlling of the pH level.

**SPECIFIC OUTCOME 2**

Prepare to control the pH level.

**SPECIFIC OUTCOME 3**

Control the pH level.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the controlling process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Remove airborne dust by means of a bag filter*

SAQA US ID		UNIT STANDARD TITLE	
252331		Remove airborne dust by means of a bag filter	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the filtering process.

**SPECIFIC OUTCOME 2**

Prepare to filter airborne dust.

**SPECIFIC OUTCOME 3**

Filter airborne dust.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the filtering process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Slake lime*

SAQA US ID	UNIT STANDARD TITLE		
252332	Slake lime		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the slaking of lime.

**SPECIFIC OUTCOME 2**

Prepare to slake lime.

**SPECIFIC OUTCOME 3**

Slake lime.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the lime slaking process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Dispatch metallurgical process by-products*

SAQA US ID		UNIT STANDARD TITLE	
252333		Dispatch metallurgical process by-products	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the dispatch process.

**SPECIFIC OUTCOME 2**

Prepare to dispatch by-products.

**SPECIFIC OUTCOME 3**

Dispatch by-products.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the dispatch process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Granulate a precious metal***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252334		Granulate a precious metal	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the granulation of a precious metal.

**SPECIFIC OUTCOME 2**

Prepare to granulate.

**SPECIFIC OUTCOME 3**

Granulate a precious metal.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the granulation process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Handle acids safely in a metallurgical plant***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252335	Handle acids safely in a metallurgical plant		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the handling of acids.

**SPECIFIC OUTCOME 2**

Prepare to handle acids.

**SPECIFIC OUTCOME 3**

Handle acids.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the acid handling process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:****Dispatch bullion**

SAQA US ID		UNIT STANDARD TITLE	
252336		Dispatch bullion	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the dispatch process.

**SPECIFIC OUTCOME 2**

Prepare to dispatch bullion.

**SPECIFIC OUTCOME 3**

Dispatch bullion.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the dispatch process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:***Handle liquid cyanide safely in a metallurgical plant*

SAQA US ID	UNIT STANDARD TITLE		
252337	Handle liquid cyanide safely in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the handling of liquid cyanide.

**SPECIFIC OUTCOME 2**

Prepare to handle liquid cyanide.

**SPECIFIC OUTCOME 3**

Handle liquid cyanide.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to cyanide handling.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Perform minor mechanical maintenance on metallurgical process equipment***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252338	Perform minor mechanical maintenance on metallurgical process equipment		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to process equipment mechanical maintenance.

**SPECIFIC OUTCOME 2**

Prepare to maintain process equipment.

**SPECIFIC OUTCOME 3**

Maintain process equipment.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to process equipment mechanical maintenance.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Wash material by means of a rotary scrubber***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252339		Wash material by means of a rotary scrubber	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the washing of material by means of a rotary scrubber.

**SPECIFIC OUTCOME 2**

Prepare to wash material.

**SPECIFIC OUTCOME 3**

Wash material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the washing process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****De-water material by means of a de-watering screen***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252340		De-water material by means of a de-watering screen	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the de-watering of material.

**SPECIFIC OUTCOME 2**

Prepare to de-water material.

**SPECIFIC OUTCOME 3**

De-water material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the de-watering process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Perform gravity concentration in a metallurgical plant***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252341		Perform gravity concentration in a metallurgical plant	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the gravity concentration process.

**SPECIFIC OUTCOME 2**

Prepare to separate material.

**SPECIFIC OUTCOME 3**

Separate material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the gravity concentration process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Regenerate organic solvent***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252342		Regenerate organic solvent	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to organic solvent regeneration.

**SPECIFIC OUTCOME 2**

Prepare to regenerate organic solvent.

**SPECIFIC OUTCOME 3**

Regenerate organic solvent.

**SPECIFIC OUTCOME 4**

Complete duties pertaining to the regeneration process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Recover metal by means of centrifugal concentration***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252343		Recover metal by means of centrifugal concentration	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the centrifugal concentration process.

**SPECIFIC OUTCOME 2**

Prepare to recover metal.

**SPECIFIC OUTCOME 3**

Recover metal.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the centrifugal concentration process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Neutralize solution for final processing***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252344		Neutralize solution for final processing	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the neutralizing process.

**SPECIFIC OUTCOME 2**

Prepare to neutralize solution.

**SPECIFIC OUTCOME 3**

Neutralize solution.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the neutralizing process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:***Transport material by means a screw conveyor*

SAQA US ID		UNIT STANDARD TITLE	
252345		Transport material by means a screw conveyor	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge and understanding of Transporting material by means a screw conveyor.

**SPECIFIC OUTCOME 2**

Prepare to transport material.

**SPECIFIC OUTCOME 3**

Transport material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the transport of material.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Recover gold from solution by means of chemical precipitation***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252346		Recover gold from solution by means of chemical precipitation	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the recovery of gold from a solution by means of precipitation.

**SPECIFIC OUTCOME 2**

Prepare to precipitate gold.

**SPECIFIC OUTCOME 3**

Precipitate gold.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the precipitation process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Convey material by means a bucket elevator***

SAQA US ID		UNIT STANDARD TITLE	
252347		Convey material by means a bucket elevator	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge and understanding of conveying material by means of a bucket elevator.

**SPECIFIC OUTCOME 2**

Prepare to convey material.

**SPECIFIC OUTCOME 3**

Convey material.

**SPECIFIC OUTCOME 4**

Monitor bucket elevator conveying operations.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:****Regenerate resin**

SAQA US ID	UNIT STANDARD TITLE		
252348	Regenerate resin		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to resin regeneration.

**SPECIFIC OUTCOME 2**

Prepare to regenerate resin.

**SPECIFIC OUTCOME 3**

Regenerate resin.

**SPECIFIC OUTCOME 4**

Complete duties pertaining to the regeneration process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:****Generate compressed air**

SAQA US ID	UNIT STANDARD TITLE		
252349	Generate compressed air		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the generation of compressed air.

**SPECIFIC OUTCOME 2**

Prepare to generate compressed air.

**SPECIFIC OUTCOME 3**

Generate compressed air.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the compressed air generation process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

## UNIT STANDARD:

*Determine relative density by means of a density scale*

SAQA US ID	UNIT STANDARD TITLE		
252350	Determine relative density by means of a density scale		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the determination of relative density.

**SPECIFIC OUTCOME 2**

Prepare to determine relative density.

**SPECIFIC OUTCOME 3**

Determine relative density.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the determination of relative density.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:***Classify material by means of a winnower*

SAQA US ID		UNIT STANDARD TITLE	
252351		Classify material by means of a winnower	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	5

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the classification of material by means of a winnower.

**SPECIFIC OUTCOME 2**

Prepare to classify material.

**SPECIFIC OUTCOME 3**

Classify material.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the classification process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:***Load sulphuric acid from a bulk storage facility into a tanker*

SAQA US ID		UNIT STANDARD TITLE	
252352		Load sulphuric acid from a bulk storage facility into a tanker	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the loading of sulphuric acid.

**SPECIFIC OUTCOME 2**

Prepare to load sulphuric acid.

**SPECIFIC OUTCOME 3**

Load sulphuric acid.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the loading process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Load carbon from a storage facility into a road tanker***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252353	Load carbon from a storage facility into a road tanker		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the loading of carbon.

**SPECIFIC OUTCOME 2**

Prepare to load carbon.

**SPECIFIC OUTCOME 3**

Load carbon.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the loading process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****De-water material by means of a vibrating screen***

<b>SAQA US ID</b>	<b>UNIT STANDARD TITLE</b>		
252354	De-water material by means of a vibrating screen		
<b>ORIGINATOR</b>	<b>PROVIDER</b>		
SGB Mining and Minerals			
<b>FIELD</b>	<b>SUBFIELD</b>		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to de-watering material by means of a vibrating screen.

**SPECIFIC OUTCOME 2**

Prepare to de-water material.

**SPECIFIC OUTCOME 3**

De-water material.

**SPECIFIC OUTCOME 4**

Complete duties pertaining to the de-watering process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Off-load pulp from a tanker into a storage facility***

SAQA US ID		UNIT STANDARD TITLE	
252355		Off-load pulp from a tanker into a storage facility	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the off-loading of pulp.

**SPECIFIC OUTCOME 2**

Prepare to off-load pulp.

**SPECIFIC OUTCOME 3**

Off-load pulp.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the off-loading process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Off-load ore from a rail truck into a storage facility***

<b>SAQA US ID</b>		<b>UNIT STANDARD TITLE</b>	
252356		Off-load ore from a rail truck into a storage facility	
<b>ORIGINATOR</b>		<b>PROVIDER</b>	
SGB Mining and Minerals			
<b>FIELD</b>		<b>SUBFIELD</b>	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
<b>ABET BAND</b>	<b>UNIT STANDARD TYPE</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Undefined	Regular	Level 2	2

**SPECIFIC OUTCOME 1**

Demonstrate knowledge relating to the off-loading of ore.

**SPECIFIC OUTCOME 2**

Prepare to off-load ore.

**SPECIFIC OUTCOME 3**

Off-load ore.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the off-loading process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	<b>ID</b>	<b>QUALIFICATION TITLE</b>	<b>LEVEL</b>	<b>STATUS</b>	<b>END DATE</b>
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Remove impurities from carbon by means of acid treatment***

SAQA US ID		UNIT STANDARD TITLE	
252357		Remove impurities from carbon by means of acid treatment	
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	6

**SPECIFIC OUTCOME 1**

Demonstrate knowledge and understanding relating to the acid treatment process.

**SPECIFIC OUTCOME 2**

Prepare to acid treat carbon.

**SPECIFIC OUTCOME 3**

Acid treat carbon.

**SPECIFIC OUTCOME 4**

Complete the duties pertaining to the acid treatment process.

**QUALIFICATIONS UTILISING THIS UNIT STANDARD**

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59305	National Certificate: Mineral Processing	Level 2	Draft - Prep for P Comment	