

No. 12

11 January 2008

**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

Water Sector

registered by Organising Field 12, Physical Planning and Construction, 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.saga.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 8 February 2008**. All correspondence should be marked **Standards Setting – Water Sector** and addressed to

The Director: Standards Setting and Development
SAQA
Attention: Mr. D. Mphuthing
Postnet Suite 248
Private Bag X06
Waterkloof
0145
or faxed to 012 – 431-5144
e-mail: dmphuthing@saga.org.za

DR S BHIKHA
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
National Certificate: Water and Wastewater Reticulation Services

SAQA QUAL ID	QUALIFICATION TITLE		
60169	National Certificate: Water and Wastewater Reticulation Services		
ORIGINATOR	PROVIDER		
SGB Water Sector			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	12 - Physical Planning and Construction	Civil Engineering Construction	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	124	Level 2	Regular-Unit Stds Based

This qualification replaces:

Qual ID	Qualification Title	NQF Level	Min Credits	Replacement Status
48907	National Certificate: Wastewater Reticulation Services	Level 2	128	Will occur as soon as 60169 is registered

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

The qualification will provide the learner with the knowledge and skills in water and wastewater reticulation services as a participating member of a team, attending to the operation, maintenance and construction of reticulation systems.

Qualifying learners are able to:

- Demonstrate interactive and communication skills.
- Demonstrate knowledge of the Occupational Health and Safety Act, no. 85 of 1993.
- Work in a team operating and maintaining water and waste water reticulation systems.
- Work in a team constructing water and waste water reticulation systems.

Rationale:

The need for this qualification has been established by the SGB across the water and wastewater industry sector. This qualification is aimed at learners who wish to enter or further their career in the water and/or wastewater reticulation services industry and have gained experience in related industry sub fields and now wish to receive formal recognition for their experience and knowledge. This qualification serves as a basis for the development of competence in the individual streams of water and wastewater reticulation or a combination thereof.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED IN PLACE

It is assumed that learners are already competent in the following:

Source: National Learners' Records Database

Qualification 60169

19/12/2007

Page 1

- Communication at NQF Level 1.
- Mathematical literacy at NQF Level 1.

Recognition of Prior Learning:

This Qualification may be achieved in part through skills programmes or completely through the recognition of prior learning, which includes formal, informal and non-formal learning and work experience. Any learner wishing to be directly assessed may arrange to do so, without attending further training or education. The assessor and learner will decide together on the most appropriate assessment route to be taken.

QUALIFICATION RULES

This qualification consists of Fundamental credits totalling 36, Core credits totalling 68, all of which are compulsory. The qualification also has Electives totalling 68.

Learners have to choose a minimum of 20 credits from the Electives to be awarded the qualification. Total credits for this qualification will therefore be 124.

EXIT LEVEL OUTCOMES

1. Demonstrate interactive and communication skills.
2. Demonstrate knowledge of the Occupational Health and Safety Act.
3. Work in a team operating and maintaining water and waste water reticulation systems.
4. Work in a team constructing water and waste water reticulation systems.

Critical Cross-Field Outcomes:

The learner is able to:

- Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation. This relates to all the associated assessment criteria.
- Work effectively with others as a member of a team, group, organisation, and community. This relates to associated assessment criteria: 1.1; 1.2 and 1.4.
- Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation. This relates to all the associated assessment criteria.
- Work effectively with others as a member of a team, group, organisation, and community. This relates to all assessment criteria.
- Collect, analyse, organise and critically evaluate information. This relates to all the associated assessment criteria.
- Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation. This relates to all the associated assessment criteria.
- Work effectively with others as a member of a team, group, organisation, and community. This relates to all assessment criteria.
- Collect, analyse, organise and critically evaluate information. This relates to all the associated assessment criteria.
- Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation. This relates to all the associated assessment criteria.
- Work effectively with others as a member of a team, group, organisation, and community. This relates to all assessment criteria.
- Collect, analyse, organise and critically evaluate information. This relates to all the associated assessment criteria.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- 1.1 Information should be accessed and used in the context of workplace tasks and activities.
- 1.2 Oral communication is conducted in accordance with workplace policies and procedures.
- 1.3 Written communication is defined to specific contexts within the water and waste water industry.
- 1.4 Language and communication is used for accessing and navigating learning programmes.

Associated Assessment Criteria for Exit Level Outcome 2:

- 2.1 Personal safety practices on a waste water and water reticulation system should be applied in accordance with Health and Safety policies and procedures.
- 2.2 Tools and equipment should be used in accordance with Health and Safety policies and Workplace procedures.
- 2.3 Task and activities are carried out in accordance with safety policies and procedures.

Associated Assessment Criteria for Exit Level Outcome 3:

- 3.1 Knowledge of equipment and tools used for the maintenance of waste water and water reticulation systems are demonstrated in accordance with workplace policies and procedures.
- 3.2 Tasks and processes involved in the maintenance of waste water and water reticulation systems are executed in accordance with workplace policies and procedures.
- 3.3 The use of materials, pipes and fittings in the maintenance and operation of reticulation systems are compliant with national industry and manufacturer's specifications and codes of practice.

Associated Assessment Criteria for Exit Level Outcome 4:

- 4.1 Knowledge of equipment, tools for the construction of waste water and water reticulation systems are demonstrated in accordance with workplace specifications, policies and procedures.
- 4.2 Tasks and processes involved in the construction of waste water and water reticulation systems and sub systems are executed in accordance with workplace policies and procedures.
- 4.3 The use of parts, components and materials in the construction of reticulation systems are compliant with national industry and, manufacturer's specifications and codes of practices.

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. This qualification provides for this by, for example assessing mathematics with applied calculations, surfacing in unit standards from the core section of this qualification as the assessment criteria overlaps and specific outcomes dissects across the sections of the qualification matrix. Integrated assessment must evaluate the quality of observable performance as well as the thinking behind the performance.
- Most assessment aspects will demand practical demonstration while others may not.
- Since this is one of a series of qualifications in a framework, 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 further learning. The assessment also ensures that all the critical cross-field outcomes and essential embedded knowledge of associated unit standards has been achieved, by assessing through integrated assessment.

INTERNATIONAL COMPARABILITY

International qualifications were examined to ensure that the qualification model and associated unit standards proposed are comparable in terms of qualification levels, scope and competencies covered. However, the core and elective components have been developed and/or revised taking into account South Africa's unique context, but also looking at international best practice.

Qualifications from the following countries were examined:

Australian Qualifications Framework (AQF):

- NWP05 Water Industry and the Certificate Course in Water and Wastewater Reticulation.

Scottish Vocational Qualifications (SQA):

- Water Distribution: Water Level 2 - Code H7HE.
- Construction Practice: Substructures - Code D2 XK.
- Construction Technology: Substructure and Remedial works - D5 XY.

New Zealand Qualifications Authority (NZQA):

- National Certificate: Water and Wastewater Reticulation and its associated unit standards.
- National Certificate in Water and Wastewater reticulation (Site Operator).

United Kingdom (QCA):

- City & Guilds Level 2 Certificate in Water Engineering, 500/1698/2.
- Certificate in Process Plant Operations Level 2.
- Cambridge University: Module 4D15 - Sustainable Water Engineering.
- Modelling Water Distribution Networks MODULE CODE: CIV.

United States of America:

- SD Association of Rural Water Systems Sioux Falls, South Dakota 57106, Water and Wastewater Operator Certification Board.

Findings concerning comparability:

A substantial degree of similarity was found in most of the qualifications examined. Although the South African qualification combines both water and wastewater reticulation services due to the similarities found in the core components of both qualifications, the revised qualification provides a mix of mandatory unit standards to cover both water and wastewater core competencies and electives as optional units that enable learners to choose from to address their particular roles in their respective work areas and specialization.

The South African qualification and its associated unit standards is generally comparable to the Scottish, Australian, New Zealand in terms of degree of complexity, scope and range of competencies covered but are offered and structured differently with the United Kingdom qualification. The UK refers to reticulation as distribution and the implementation of training takes place differently to the system employed by South Africa.

New Zealand being an OECD country, offered many similarities to the environment and structure of the South African Industry and the way their courses and curricular is structured. Unit standard content would often combine concepts differently to the what is done locally and the analysis of these often provided new insight into best practice.

ARTICULATION OPTIONS

This is the first qualification in a series from NQF Level 2 through to NQF Level 5. This series of qualifications can articulate directly to learning programmes and qualifications in the Water and Waste Water Reticulation sub fields. It has entrepreneurial unit standards, as an elective choice at this level and at progressive levels, to accommodate for this type of learning and progression. It also opens the possibility for further learning in the sub-field of Civil Engineering Construction.

MODERATION OPTIONS

- A person assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor 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 ETQA.
- Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQAs policies and guidelines for assessment and moderation; in terms of agreements reached around assessment and moderation between ETQAs (including professional bodies); and in terms of the moderation guideline.
- Moderation must include both internal and external moderation of assessments at exit points of the qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards and the exit level outcomes of the qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

All assessors need to be Subject Matter Experts, qualified one level higher and registered with relevant ETQA.

NOTES

This qualification replaces qualification 48907, "National Certificate: Wastewater Reticulation Services", Level 2, 128 credits.

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	116932	Operate a personal computer system	Level 1	3
Core	246459	Apply personal safety practices in the water sector	Level 2	4
Core	254055	Construct water reticulation concrete work and brick masonry	Level 2	5
Core	13222	Deal with safety, health and environmental emergencies in the workplace	Level 2	4
Core	254059	Demonstrate Knowledge of Backfilling and Compaction	Level 2	4
Core	8494	Demonstrate an understanding of HIV/AIDS and its implications	Level 2	4

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Core	254063	Demonstrate knowledge of pipes, associated fittings, valves and meters used in water and wastewater reticulation systems.	Level 2	10
Core	246463	Demonstrate knowledge of water cycle, water and wastewater systems and processes	Level 2	5
Core	254061	Excavate a trench and install shoring	Level 2	4
Core	10252	Identify, inspect, use, maintain and care for engineering hand tools	Level 2	6
Core	254060	Operate mechanical, electrical, hydraulic and pneumatic tools and equipment	Level 2	4
Core	12484	Perform basic fire fighting	Level 2	4
Core	12483	Perform basic first aid	Level 2	4
Core	12481	Sling loads	Level 2	4
Core	9322	Work in a team	Level 2	3
Elective	254056	Assist in the operation and maintenance of Canals	Level 2	5
Elective	254058	Assist in the operation and maintenance of dams	Level 2	4
Elective	254054	Demonstrate knowledge of wastewater pipe unblocking and maintenance	Level 2	12
Elective	254057	Demonstrate knowledge of water meters and reading techniques, and identify faults in meters	Level 2	3
Elective	254062	Demonstrate knowledge of water reticulation systems and the cleaning and disinfection thereof	Level 2	12
Elective	9973	Apply basic business concepts	Level 3	8
Elective	11783	Install and maintain a water supply system	Level 3	12
Elective	11784	Install and maintain drainage systems	Level 3	12

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION

None



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate knowledge of wastewater pipe unblocking and maintenance***

SAQA US ID	UNIT STANDARD TITLE		
254054	Demonstrate knowledge of wastewater pipe unblocking and maintenance		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	12

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Describe the purpose and nature of wastewater collection systems.

SPECIFIC OUTCOME 2

Describe the types of and components of wastewater collection systems.

SPECIFIC OUTCOME 3

Clear a blockage within a wastewater collection system.

SPECIFIC OUTCOME 4

Carry out access chamber maintenance procedures.

SPECIFIC OUTCOME 5

Describe the causes of blockages within wastewater collection systems.

SPECIFIC OUTCOME 6

Describe the equipment and techniques available for clearing blockages, and preventative maintenance.

SPECIFIC OUTCOME 7

Demonstrate knowledge of wastewater overflow management and clean-up procedures.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Construct water reticulation concrete work and brick masonry***

SAQA US ID	UNIT STANDARD TITLE		
254055	Construct water reticulation concrete work and brick masonry		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	5

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Mark out the foundation for simple concrete and brickwork.

SPECIFIC OUTCOME 2

Dig foundation in accordance with the specification.

SPECIFIC OUTCOME 3

Mix concrete in accordance with specification.

SPECIFIC OUTCOME 4

Build simple brickwork in accordance with specification.

SPECIFIC OUTCOME 5

Complete concrete structure or brickwork in accordance with specification.

SPECIFIC OUTCOME 6

Construct alternative manhole using concrete rings as per specification.

SPECIFIC OUTCOME 7

Tidy work site after completion of construction in accordance with work procedures.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Assist in the operation and maintenance of Canals

SAQA US ID	UNIT STANDARD TITLE		
254056	Assist in the operation and maintenance of Canals		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	5

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Assist in the distribution of water.

SPECIFIC OUTCOME 2

Demonstrate a basic understanding of water measurement.

SPECIFIC OUTCOME 3

Assist in the basic maintenance of canals.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of water meters and reading techniques, and identify faults in meters

SAQA US ID	UNIT STANDARD TITLE		
254057	Demonstrate knowledge of water meters and reading techniques, and identify faults in meters		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of the operation, uses, classes, applications, installation, and limitations of water meters.

SPECIFIC OUTCOME 2

Describe meter reading techniques, take readings, and calculate flow rates and volume from a water meter.

SPECIFIC OUTCOME 3

Identify faults in, and service requirements of a water meter.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Assist in the operation and maintenance of dams***

SAQA US ID	UNIT STANDARD TITLE		
254058	Assist in the operation and maintenance of dams		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate basic knowledge of dams.

SPECIFIC OUTCOME 2

Assist in the operation of dams.

SPECIFIC OUTCOME 3

Assist in the basic maintenance of dams.

SPECIFIC OUTCOME 4

Handle and assist in the maintenance of a boat.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate Knowledge of Backfilling and Compaction

SAQA US ID	UNIT STANDARD TITLE		
254059	Demonstrate Knowledge of Backfilling and Compaction		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Identify and describe backfill materials and compaction equipment.

SPECIFIC OUTCOME 2

Prepare for compacting operations.

SPECIFIC OUTCOME 3

Accept and place materials.

SPECIFIC OUTCOME 4

Assist with compaction of materials.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Operate mechanical, electrical, hydraulic and pneumatic tools and equipment***

SAQA US ID	UNIT STANDARD TITLE		
254060	Operate mechanical, electrical, hydraulic and pneumatic tools and equipment		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
14033	Operate mechanical, electrical, hydraulic and pneumatic tools and equipment	Level 2	10	Will occur as soon as 254060 is registered

SPECIFIC OUTCOME 1

Use mechanical tools and equipment.

SPECIFIC OUTCOME 2

Apply and maintain safety when using electricity.

SPECIFIC OUTCOME 3

Use electrical tools safely.

SPECIFIC OUTCOME 4

Use pneumatic tools in accordance with good practice and safety.

SPECIFIC OUTCOME 5

Use hydraulic equipment safely.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Excavate a trench and install shoring***

SAQA US ID		UNIT STANDARD TITLE	
254061		Excavate a trench and install shoring	
ORIGINATOR		PROVIDER	
SGB Water Sector			
FIELD		SUBFIELD	
12 - Physical Planning and Construction		Civil Engineering Construction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Plan and prepare to excavate the trench.

SPECIFIC OUTCOME 2

Prepare the site.

SPECIFIC OUTCOME 3

Excavate the trench.

SPECIFIC OUTCOME 4

Install shoring where required.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of water reticulation systems and the cleaning and disinfection thereof

SAQA US ID	UNIT STANDARD TITLE		
254062	Demonstrate knowledge of water reticulation systems and the cleaning and disinfection thereof		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	12

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Describe the purpose and components of water supply systems.

SPECIFIC OUTCOME 2

Describe the hydraulics of a water reticulation system.

SPECIFIC OUTCOME 3

Describe the sources of contamination and the consequences of not cleaning water mains and reservoirs.

SPECIFIC OUTCOME 4

Describe the techniques used for cleaning and disinfecting water mains.

SPECIFIC OUTCOME 5

Describe the planning, and techniques used for cleaning water reservoirs.

SPECIFIC OUTCOME 6

Describe the use of chlorine compounds for disinfection.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of pipes, associated fittings, valves and meters used in water and wastewater reticulation systems.

SAQA US ID	UNIT STANDARD TITLE		
254063	Demonstrate knowledge of pipes, associated fittings, valves and meters used in water and wastewater reticulation systems.		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	10

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
12337	Demonstrate knowledge of pipes associated fittings valves and meters used in water reticulation systems	Level 2	10	Will occur as soon as 254063 is registered

SPECIFIC OUTCOME 1

Identify and explain different pipes.

SPECIFIC OUTCOME 2

Identify and explain the specifications of associated fittings in reticulation systems.

SPECIFIC OUTCOME 3

Identify and explain the types and functions of valves used on reticulation systems.

SPECIFIC OUTCOME 4

Correctly identify and explain the type of meters used in different reticulation systems.

SPECIFIC OUTCOME 5

Explain and demonstrate storage and handling procedures for pipes associated fittings, valves and meters.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	60169	National Certificate: Water and Wastewater Reticulation Services	Level 2