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AIDS HELPLINE: 0800-0123-22 Prevention is the cure



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GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 1636

7 November 2003

Established in terms of Act 58 of 1995

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

Financial Services

Registered by NSB 03, Business, Commerce and Management Studies, 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 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, Hatfield Forum West, 1069 Arcadia Street, Hatfield, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 7 December 2003***. All correspondence should be marked **Standards Setting – SGB for Financial Services** and addressed to

The Director: Standards Setting and Development
SAQA

Attention: Mr. D Mphuthing

Postnet Suite 248


Private Bag X06

Waterkloof

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DUGMORE MPHUTHING
DEPUTY DIRECTOR: STANDARDS SETTING

No. 1637

7 November 2003



Established in terms of Act 58 of 1995

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 NSB 12, Physical Planning and Construction, publishes the following qualifications 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 upon which qualifications are based. 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, Hatfield Forum West, 1065 Arcadia Street, Hatfield.

Comment on the unit standards should reach SAQA at the address *below and no later than 7 December 2003*. All correspondence should be marked **Standards Setting – SGB Water Sector** addressed to

The Director: Standards Setting and Development
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DUGMORE MPHUTHING**ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT**

No. 1638

7 November 2003



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

General Education and Training Certificate: Water Services

SAQA QUAL ID	QUALIFICATION TITLE	
48495	General Education and Training Certificate: Water Services	
SGB NAME	SGB Water Sector	
ABET BAND	PROVIDER NAME	
Undefined		
QUALIFICATION CODE	QUAL TYPE	SUBFIELD
PPC-1-National Certificate	National Certificate	Physical Planning, Design and Management
MINIMUM CREDITS	NQF LEVEL	QUALIFICATION CLASS
122	Level 1	Regular-Unit Stds Based
SAQA DECISION NUMBER	REGISTRATION START DATE	REGISTRATION END DATE

PURPOSE OF THE QUALIFICATION

A learner who has achieved this Qualification will have a firm foundation of knowledge and portable skills for further learning, an overview of key issues and practices in the water sector, and entry skills and knowledge relating to water services (this includes water treatment, water reticulation, waste water reticulation, waste water treatment, community water and sanitation).

Learners will have achieved a GET level both in general education areas such as literacy and numeracy, and in a range of life skills, providing them with the platform from which to proceed into the further Education and Training (FET) band. Competence in language usage and computation as used in the water industry are key to further learning. Life skills such as study skills enable learners to engage successfully with further education and training opportunities. Other life skills give them an understanding of the contexts in which they live and work, including insight into technology, environment, work and business environments, and issues such as health, and ethics within society.

Qualifying learners are able to:

- > Engage in a range of oral and written communication activities;
- > Understand the world of work and select appropriate business opportunities
- > Use and communicate numerical data
- > Use algebraic notation
- > Use measurement in a variety of contexts
- > Read and interpret maps;
- > Explain and investigate natural sciences
- > Explain the water cycle, water and wastewater reticulation systems, water purification and sanitation and wastewater treatment
- > Operate basic mechanical and electrical equipment

Learners with this Qualification will also gain an introductory knowledge of the water sector, enabling them to understand the nature of water issues in South Africa, recognise entrepreneurial opportunities in the sector, and apply core skills in employable skills units. Through the elective component of the Qualification learners will also be able to select a possible area of work or job in which they can begin to pursue further studies in the career path of their choice within the water sector.

This Qualification forms the foundation for advancement to the various Water Qualifications on NQF level 2 (water purification, wastewater treatment, water reticulation, community water, health and sanitation and wastewater reticulation). The individual learner will have the capacity to advance and gain skills and self-respect, as the qualified learner will gain practical skills as well as foundational and business skills.

Rationale Of The Qualification

This General Education and Training Certificate (GETC) level is a key stage within the learning pathways of those with limited formal education. As the culmination of Adult Basic Education and Training (ABET), it represents strategic development of under-educated individuals. As the bridge between ABET and Further Education and Training (FET), it lays a solid grounding for individuals to move into and within sector or career pathways, in many cases using already existing technical or vocational skills for purposeful progression.

On the basis of this understanding of the importance of NQF Level 1, the Water SGB in consultation with the Local Government, Water and Related Services Sector Education and Training Authority (LGWSETA) has developed a foundational Qualification at this level in the area of Water Services.

ABET is a continuum of learning beginning at initial literacy at ABET Level 1 and culminating at ABET Level 3, and eventually NQF level 1. In many respects ABET has been excluded from SETA and NQF-related developments, primarily due to the fact that the GETC was seen as a school-focused 'general education' certificate for both school and adult learners. Industry-based Qualifications were perceived as taking NQF Level 2 as their starting point.

This perception has shifted with the realisation that sustainable skills development must be based on foundational skills and knowledge, many of which are encompassed by ABET. This applies even to some learners who already have a senior certificate, but lack aspects of foundational skills.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

It is assumed that learners wishing to enter a programme leading to this Qualification have demonstrated competence in the Unit Standards for ABET Level 3 Language and Communications and ABET Level 3 Numeracy including basic calculations.

Recognition of Prior Learning

This Qualification may be achieved in part 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

Rules of combination for the General Education and Training Certificate: Water Services (122 credits)

Fundamental

Given the key purpose of this Qualification as a foundation for further education and training, standards in this component make up the bulk of the Qualification, namely 82 credits, or just under 70% of the Qualification. As noted, all of these standards are already registered.

Core

These standards provide learners with an introductory overview of the water sector and of water issues in South Africa. Twenty nine credits or 24% of the core Unit Standards relate to water specific information.

Elective

Learners are able to select from a bank of vocational elective standards at NQF Level 1 or above. The electives reflect specific functions within the water sector. Selection will be based on either a learner's current work context, or a desired career pathway. The learner will select these Unit Standards in negotiation with his/ her employer or training provider.

Learners need to achieve a minimum of 11 credits from the electives, in order to achieve the minimum required 122 credits for a certificate at this level.

EXIT LEVEL OUTCOMES

On achieving this Qualification the qualifying learner will be able to:

1. Demonstrate an ability to consider a range of options and make decisions using language, literacy and communication skills.
2. Use mathematics to work with numbers, number patterns, measurements, ratio and relationships, space, shape and mapping.
3. Use learning and research methods to improve personal lives.
4. Function within a workplace environment and understand common workplace processes.
5. Apply health and safety issues in the workplace.
6. Apply learning skills and general knowledge in their personal, workplace and educational lives.

ASSOCIATED ASSESSMENT CRITERIA

- 1.1 Language, literacy and communication skills are displayed to show a critical awareness of language usage;
- 1.2 A range of values in texts related to the water sector are engaged with;
- 1.3 Present information is identified, accessed, analysed, and used, whereas appropriate communication skills, conventions and structures are used for specific purposes and situations;
- 1.4 A variety of strategies to learn are explored and used; and meaning, organisation and structure in texts are engaged with;
- 1.5 Communication, computational and learning skills are used effectively in order to make choices about further education and training.
- 1.6 Information gathered about the water services sector is used to make appropriate decisions regarding career options.
- 1.7 Knowledge of water resources is used to act in ways that conserve water in South Africa.
- 2.1 Mathematical language and numeracy is used to manipulate numbers in a meaningful way
- 2.2 Measurements are used in a variety of contexts including the water context
- 2.3 Algebraic notations are used in a meaningful manner
- 2.4 The role of maths in the social, cultural, political and economic worlds is understood.
- 3.1 Time is managed efficiently and study skills are displayed;
- 3.2 Effective personal planning and self-management is displayed.
- 3.3 Information is analysed and organised efficiently and effectively;
- 4.1 The role and impact of technology in society is recognised, and appropriate and available technology is recognised and accessed in a specific context
- 4.2 General business principles and practices are explained at a basic level
- 4.3 An understanding of social issues in general are understood, whereas own values, ethics and social responsibilities are identified.
- 4.4 Key issues in water services in South Africa are identified.
- 4.5 Key role-players in the water services industry are recognised, and knowledge to identify and select career opportunities is displayed.
- 4.6 Business opportunities in the sector are recognised.
- 4.7 Core skills and knowledge in water services are applied to a particular working context.
- 5.1 Explain ethical and safety issues in the water sector
- 5.2 Apply principles of occupational health and safety
- 5.3 Describe security issues in the workplace
- 6.1 The ability to work with others in both learning and work-oriented situations is demonstrated.
- 6.2 Strategies to reflect on practice and to find ways to improve life are displayed.
- 6.3 Learners' reflections on their own learning and opportunities for further learning in future are displayed.

Integrated Assessment

Integrated assessment at the level of Qualification provides an opportunity for learners to show that they are able to integrate concepts, ideas and actions across Unit Standards to achieve competence that is grounded and coherent in relation to the purpose of the Qualification. Integrated assessment should show how already demonstrated competence in individual areas can be linked and applied for the achievement of a holistic outcome.

Integrated assessment must judge the quality of the observable performance, and also the quality of the thinking that lies behind it. Assessment tools must encourage learners to give an account of the thinking and decision-making that underpin their demonstrated performance. Some assessment practices will demand practical evidence while others may be more theoretical, depending on the type of outcomes to be assessed, and the nature and level of the Qualification. The ratio between action and interpretation is not fixed, but varies according to the demands of the Qualification.

While the generic component (literacy, communication and life skills) of this Qualification at NQF Level 1 can be assessed through occupational contexts and activities relating to the water sector, care must be taken in both the learning programme and the assessment to ensure that these foundational skills are truly portable. The primary aim of this Qualification is to ensure that learners have a sound base of general education to prepare them for further learning, whatever career path they may choose. Learners must be able to transfer generic skills such as language, computation and learning skills etc across a number of different contexts, and apply them within a number of learning areas.

A broad range of task-orientated and theoretical assessment tools may be used, with the distinction between practical knowledge and disciplinary knowledge maintained so that each takes its rightful place. Unit Standards in the Qualification must be used to assess specific and critical cross-field outcomes. During integrated assessments the assessor should make use of formative and summative assessment methods and should assess combinations of practical, applied, foundational and reflexive competencies.

INTERNATIONAL COMPARABILITY

The bulk of this Qualification is made up of the Fundamental components, reflecting foundational learning and generic skills and knowledge. The fundamental components, reflecting foundational learning and generic skills and knowledge have been derived from registered, local adult education Unit Standards. The core and elective components have been developed taking into account the uniqueness of South Africa's water sector. The working group has been unable to find any international water Qualifications at NQF level 1 against which to benchmark these Unit Standards and Qualifications.

ARTICULATION OPTIONS

This Qualification will allow a person to articulate vertically a variety of Qualifications on NQF level 2 in the water sector. These include the National Certificate in Water Purification Process Operations, Water Reticulation Services, Wastewater Process Operations or Wastewater Reticulation Services.

MODERATION OPTIONS

1. Anyone assessing a learner against these standards must be registered as an assessor with the relevant ETQA.
2. Any institution offering learning that will enable achievement of these Unit Standards or will assess these Unit Standards must be accredited as a provider with the relevant ETQA.
3. Moderation of assessment will be overseen by the relevant ETQA according to the moderation guideline in the relevant Qualification and the agreed ETQA procedures.
4. Therefore 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

For an applicant to register as an assessor, the applicant needs:

- > A minimum of two years practical, relevant occupational experience.
- > Declared competent in all the outcomes of the generic assessor standard, and certificated by the ETDP SETA or by the relevant ETQA.
- > Detailed documentary proof of educational Qualification, practical training undergone, and experience gained by the applicant must be provided (Portfolio of evidence).
- > Able to demonstrate competence in relation to these specified standards and Qualifications, at or above, the level of the Qualifications in question.
- > Meet any other additional requirements laid down by their constituent ETQA.

The subject matter experience of the assessor can be established by recognition of prior learning. The status of registered assessors can be checked on the appropriate ETQA database or website.

NOTES

A note on the compilation of standards in this qualification

In line with the SAQA principle of avoiding duplication, existing registered standards were used where possible. The issue around a knowledge based Qualification is documented in the accompanying motivation document.

UNIT STANDARDS

(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

	UNIT STANDARD ID AND TITLE	LEVEL	CREDITS	STATUS
Core	113933 Demonstrate knowledge of the water cycle	Level 1	4	Public Comment
Core	113935 Demonstrate knowledge of sanitation and wastewater treatment	Level 1	4	Public Comment
Core	113936 Demonstrate knowledge of water and wastewater reticulation systems	Level 1	5	Public Comment
Core	113937 Demonstrate knowledge of water purification	Level 1	4	Public Comment
Core	113941 Operate basic water related mechanical and electrical equipment	Level 1	4	Public Comment
Core	8494 Demonstrate an understanding of HIV/AIDS and its implications	Level 2	4	Registered
Core	12035 Apply personal safety practices in the water sector	Level 2	4	Registered
Elective	10006 Demonstrate an understanding of entrepreneurship and develop entrepreneurial qualities	Level 1	2	Registered
Elective	12878 Use and maintain Power Hand Tools on a construction Site	Level 1	5	Registered
Elective	113938 Conduct minor maintenance tasks on a water supply system	Level 1	2	Public Comment
Elective	113939 Interact with community members on water related matters	Level 1	4	Public Comment
Elective	113940 Demonstrate basic water related sampling techniques	Level 1	3	Public Comment
Elective	7547 Operate a personal computer system	Level 2	6	Registered
Elective	8420 Operate in a team	Level 2	4	Registered
Elective	9965 Render basic first aid	Level 2	3	Registered
Elective	14042 Demonstrate knowledge of environmental health and community hygiene practices	Level 2	6	Registered
Elective	113934 Read water meters	Level 2	8	Public Comment
Fundamental	7447 Working with numbers in various contexts	Level 1	6	Registered
Fundamental	7449 Critically analyse how mathematics is used in social, political and economic relations	Level 1	2	Registered
Fundamental	7450 Work with measurement in a variety of contexts	Level 1	2	Registered
Fundamental	7451 Collect, analyse, use and communicate numerical data	Level 1	2	Registered
Fundamental	7452 Describe, represent and interpret mathematical models in different contexts	Level 1	6	Registered
Fundamental	7453 Use algebraic notation, conventions and terminology to solve problems	Level 1	3	Registered
Fundamental	7461 Use maps to access and communicate information concerning routes, location and direction	Level 1	1	Registered
Fundamental	7487 Discuss the interrelationships between social justice, equity and democracy	Level 1	4	Registered
Fundamental	7507 Demonstrate an understanding of the concept of science	Level 1	2	Registered

Fundamental	7508 Conduct an investigation in the natural science	Level 1	4	Registered
Fundamental	7513 Assess the impact of scientific innovation on quality of life	Level 1	2	Registered
Fundamental	7515 Debate ethical issues arising from advances in the natural sciences	Level 1	3	Registered
Fundamental	10007 Identify, analyse and select business opportunities	Level 1	3	Registered
Fundamental	12462 Engage in a range of speaking and listening interactions for a variety of purposes	Level 1	6	Registered
Fundamental	12469 Read and respond to a range of text types	Level 1	6	Registered
Fundamental	12470 Write for a variety of different purposes	Level 1	6	Registered
Fundamental	12471 Explore and use a variety of strategies to learn (revised)	Level 1	5	Registered
Fundamental	12535 Understand the world of work	Level 1	5	Registered
Fundamental	14084 Demonstrate an understanding of and use the numbering system	Level 1	1	Registered
Fundamental	14110 Demonstrate an understanding of fundamental concepts and principles in the natural sciences	Level 1	5	Registered
Fundamental	14111 Demonstrate an understanding of how scientific skills and knowledge could contribute to sustainable use of resources	Level 1	2	Registered
Fundamental	14664 Demonstrate knowledge of diversity within different relationships in the South African society	Level 1	3	Registered
Fundamental	15091 Plan to manage one's time	Level 1	3	Registered
Fundamental	113966 Identify security, safety and environmental risks in the local environment	Level 1	6	Public Comment

No. 1639

7 November 2003



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Banking services advice

SAQA QUAL ID	QUALIFICATION TITLE	
48533	National Certificate: Banking services advice	
SGB NAME	SGB Financial Services	
ABET BAND	PROVIDER NAME	
Undefined		
QUALIFICATION CODE	QUAL TYPE	SUBFIELD
BUS-5-National Certificate	National Certificate	Finance, Economics and Accounting
MINIMUM CREDITS	NQF LEVEL	QUALIFICATION CLASS
120	Level 5	Regular-ELOAC
SAQA DECISION NUMBER	REGISTRATION START DATE	REGISTRATION END DATE

PURPOSE OF THE QUALIFICATION

The primary purpose of The National Certificate in Banking Services Advice is to provide learners with the fundamental understanding, sound knowledge and relevant skills to comply with the requirements of the regulations under the FAIS Act to enable them to offer financial advice to clients in the banking sector. The successful learner will be able to be accredited as a fit and proper person to render financial advice in the banking sector in terms of the Regulations under the FAIS Act.

This qualification also aims to provide qualifying learners with the basic competencies and skills necessary to apply the basic principles of banking to the operations of any sector of the financial services sector to the benefit of the domestic economy.

This Qualification is for learners who:

- > Have worked in one of the sub-sectors of the Financial Services industry for many years, but have no formal Qualifications in their area of specialisation.
- > Wish to extend their range of skills and knowledge of the industry so that they can become knowledgeable workers in the industry.
- > Are in a learnership agreement with the BANKSETA.
- > Have recently taken up a position in banking.
- > Require a Level 5 Qualification for licensing purposes with the Financial Services Board (FSB)

The qualification will empower learners to acquire knowledge, skills, attitudes and values required to operate responsibly in the banking sector.

Rationale:

The Financial Advisory and Intermediary Services (FAIS) Act, (Act 37 of 2002) was instituted to regulate the standard of financial planning services within the financial services sector. This Act requires all financial advisers to become licenced practitioners in the field. The Act prescribes that everyone providing services within the auspices of financial advisory and intermediary services needs to comply with the necessary regulations and, therefore, needs to be qualified at the required levels in order to offer such services.

Financial advice and services are provided by both the insurance industry and the banking sector. Some employees in banks offer insurance product-related advice to clients as their core functions. In addition to these, as part of banking services to clients, banking personnel such as tellers, advisers and consultants are required to offer and consult on financial services and, therefore have to comply with FAIS regulations. It is

estimated that 40% of people within the banking sector will have to comply with the fit and proper regulations of FAIS. This National Certificate has thus been established to address this need.

The National Certificate in Banking Services Advice aims to give all learners a fundamental understanding of FAIS requirements and other relevant legislation as well as foundational knowledge and skills required for financial planning and for providing financial services of all kinds. The Qualification also introduces the learner to basic accounting and provides him/her with banking concepts, techniques and principles.

Learners obtaining this qualification will have a firm foundation of knowledge of the banking sector and will have the necessary skills to secure a career in banking and embark on a path of lifelong learning at higher levels in banking or other fields in the financial services sector.

This National Certificate was designed to accommodate the skills needs of banking employees and address compliance with the FAIS Act within the banking services sector. Therefore, this qualification is broad based in that it accommodates any type of learner wishing to be employed in the banking sector, particularly the frontline banking staff within retail banking who have to provide a 'one-stop' service (banking and/or financial planning) to their clients.

The banking industry because of the fact that it works with other people's money is a specialised one that demands a labour pool of honest, ethical employees. This National Certificate aims to develop learners with those attitudes and values. The qualification will also give learners the opportunity to practice the skills they have learnt and apply the knowledge they have gained to their respective workplace (real or simulated) environments.

The intention is:

- > To promote the development of knowledge and skills that are required in Banking and specifically for giving financial advice.
- > To release the potential of people.
- > To provide opportunities for people to move up the value chain.
- > To provide opportunities for lifelong learning for people who work in banking as the skills, knowledge, values and attitudes reflected in the Qualification are building blocks that can be developed further at NQF Level 6.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

It is assumed that learners who access this qualification are competent in:

- > Communication at NQF Level 4
- > Mathematical Literacy at NQF Level 4.

Recognition of prior learning:

The National Certificate In Banking Services Advice: Level 5 allows open access and may be achieved in part or in whole by Recognition of Prior Learning (RPL). Provision has been made for prior learning to be recognised if a learner is able to demonstrate competence in the knowledge, skills, values and attitudes implicit in this Qualification.

Application for Recognition of Prior Learning (RPL) should be made to a relevant accredited ETQA.

QUALIFICATION RULES

N/A

EXIT LEVEL OUTCOMES

Fundamental Exit Level Outcomes:

1. Communicate effectively using verbal, non-verbal and written business communication forms in a workplace environment.

2. Conduct basic numeric calculations in order to facilitate and interpret financial data accurately and appropriately
3. Conduct one-self professionally demonstrating ethical behaviour in a workplace environment.

Core Exit Level Outcomes:

1. Demonstrate an understanding of the legislative concepts and requirements within the banking and financial services environment.
2. Develop a thorough understanding of basic economic concepts in the light of historical and current conditions relevant to the industry.
3. Discuss the applicable financial legislation in the banking, insurance, financial services and financial planning sectors.
4. Offer responsible financial advice in relation to the products offered by a specific bank in at least three of the subsections of Category I as prescribed by the FAIS Act and its Schedule of Fit and Proper categories/regulations as listed below
5. Provide a basic personal financial advisory service to clients.
6. Provide the client with basic advice on personal financial planning.
7. Explain and apply basic accounting concepts.
8. Understand and apply the basic principles of investment.
9. Develop a basic understanding of the context and principles of a business
10. Explain and apply what the Code of Banking Practice is and its implications for clients and the bank in terms of the relationship a bank has with its clients.
11. Compliance with the FAIS codes is explained and applied in terms of giving financial advice to clients.
12. The regulations pertinent to corporate financial planning are understood and applied in practice

Elective Exit Level Outcomes:

Learners will have the choice of one of the following electives covered in the subsection of Category I of the Fit and Proper Regulations:

1. Financial Services Providers (Category I)

- 1.1 Long-term insurance (category A); e.g. a funeral policy
- 1.2 Long-term insurance (category B); e.g. an education plan
- 1.3 Securities & instruments as per the definition of 'financial products' - Section 1 (1) of the FAIS Act
- 1.4 Participatory interests in one or more collective investment scheme; e.g. a unit trust
- 1.5 Deposits as defined in Section 1 (1) of the Banks Act 1990 of a term exceeding 12 months; e.g. credit card products

Critical Cross-field Outcomes:

1. Identify, systematically examine, critically evaluate and solve problems in which responses display that responsible decisions have been made, using critical and creative thinking.

> Problems are solved by methodically exploring the issues and reflecting on given data to establish a variety of solutions by also considering the current and alternative circumstances in which problems should be solved. In this way correct advice is given to clients, correct procedures are chosen and compliance with relevant legislation is ensured

2.

Work effectively with others as a member of a team, group, organisation or community.

> Learning and transfer of knowledge and skill is integrated within a team, organisation, work group or community.

> Interpersonal skills are successfully applied so as to work effectively within a team, work group or community (includes listening, non-verbal communication, conflict management, co-operation and supportive actions).

> Team objectives are achieved by displaying active team behaviour.

3.

Organize and manage oneself and one's activities responsibly and effectively.

> Activities are clearly planned and organized to achieve learning outcomes within specified timeframes and so that work tasks that have to be performed are completed on time and at the required level of performance.

4.

Collect, analyse, organize and critically evaluate information.

> Data and information about clients and investment and loan instruments and vehicles are collected, organised and accurately evaluated so that the client is given the correct advice about investments and/or loans that suit his/her circumstances and requirements and to ensure that all actions comply with legal and regulatory requirements.

5.

Communicate effectively using visual, mathematical and language skills in the mode of written presentation.

> All communication with clients uses the correct format, terminology and register and is clearly understood by the client.

> Communication with other employees is appropriate at all times.

6.

Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

> The computer, and electronic media such as e-mail, internet, and faxes are used on a day-to-day

7.

Demonstrate understanding of the world as a set of related systems by recognizing that problem solving contexts do not exist in isolation.

> Behaviour and actions are sensitive to the various cultures, working environments and sectors.

> Actions are conducted with honesty and integrity through the adherence of a code of conduct.

> Learner knows the effect of bad advice on the livelihood of the client and the viability of his/her business

8.

Self manage skills development from the range of experiences and learning opportunities available.

> Opportunities are maximized to gain learning and understanding from others.

ASSOCIATED ASSESSMENT CRITERIA

Fundamental:

1.

- > All communication oral and/or written with internal and external clients is appropriate for the circumstances and the client and use is made of the correct medium, format, vocabulary, terminology and register.
- > Communication makes use of non-verbal forms such as graphs, pie-charts diagrams etc.
- > Oral presentations make use of the appropriate electronic and/or hardcopy aids.

2.

- > The necessary calculations relating to the financial advice given to clients are performed correctly and presented in such a way that they are logical and understood by the client
- > Calculations required to perform routine work in the workplace are performed accurately and on time.

3.

- > Ethical behaviour is understood together with the way in which ethics informs a code of conduct for a specific sector or workplace.
- > The basic elements of the code of conduct that regulates the banking industry and the specific bank in which the learner is employed are understood and applied in the learner's everyday practice.
- > The way in which ethics has helped determine FAIS and FICA legislation is explained in the South African context.

Core:

1.

- > An understanding and knowledge of the relevant legislative environment is explained and applied in practical situations
- > A fundamental understanding of the theory and practice of the South African banking and financial services system is applied in practice
- > The financial products available to a client are explained with examples

2.

- > The function of the economy and its participants are identified and listed in writing
- > The concept of supply and demand as it relates to markets and economic conditions is explained in writing
- > The effects of changes in demand and/or supply on prices and quantities are interpreted and explained in writing
- > The conditions under which markets fail and why Government intervention is necessary is discussed orally
- > Basic macro-economic goals and instruments, the GDP concept and its limitations is understood and applied in practice
- > The concepts of inflation is briefly discussed orally
- > The interaction between inflation and unemployment is explained orally
- > The objectives of macroeconomic policy are listed orally or in writing
- > The differences between privatisation, deregulation and competition are explained by way of practical examples
- > Research is done to explain the interaction and differences between different economic systems

3.

- > The key compliance requirements of the following legislation is discussed, summarised and applied where applicable:

3.1 Finance Intelligence Centre Act, Act 38 of 2001(FICA)

3.2 Financial Advisors and Intermediaries Services legislation (FAIS)

3.3 Bank Act of 1990

3.4 Medical Schemes Act, 45 of 1955

3.5 Long-term Insurance Act, 52 of 1998

3.6 Short-term Insurance Act

- > A basic understanding and knowledge of the Occupational Health and Safety Act is demonstrated through application in practice

4.

Offer responsible financial advice in relation to the products offered by a specific bank in at least three of the subsections of Category I as prescribed by the FAIS Act and its Schedule of Fit and Proper

categories/regulations as listed below:

> Financial advice is given to client relating to the following Category I products:

1. Financial Services Providers (Category I)

- 1.1 Long-term insurance (category A)
- 1.2 Short-term insurance Personal loans
- 1.3 Long-term insurance (category B)
- 1.4 Retail pension benefits
- 1.5 Pension fund benefits
- 1.6 Securities & instruments as per the definition of 'financial products' - Section 1 (1) of the FAIS Act
- 1.7 Participatory interests in one or more collective investment scheme
- 1.8 Deposits as defined in Section 1 (1) of the Banks Act 1990 of a term exceeding 12 months
- 1.9 Deposits as defined in Section 1 (1) of the Banks Act 1990 of a term of 12 months or less
- 1.10 A benefit provided by a friendly society - paragraph (d) (ii) of Section 1 (1) of FAIS Act

> An explanation is given of the governing bodies/professional institutes responsible for, and the regulations pertaining to, the following Category I products:

- Long-term insurance (category C)
- Insurance commercial lines
- Foreign currency denominated investment instruments
- Health service benefits

5.

- > The selling process as it relates to financial services is explained and applied in practice
- > The following concepts relating to the steps of the sales process are identified in writing and applied:
 - The difference between offering advice and offering information
 - What constitutes financial advice
 - A basic needs analysis
- > Appropriate communication skills are applied in the sales process in a practical, relevant workplace environment
- > The advantages, features and benefits of the various products and services are identified and explained in writing with examples
- > A basic needs analysis and risk profile is conducted through a real simulated example
- > Appropriate solutions to needs are matched correctly in a real or simulated example
- > The results of the needs analysis/information is correctly interpreted in a practical example
- > The necessary legislative requirements of the FAIS Act regulations as they relate to offering/selling to clients are identified and applied in a real or simulated situation
- > The liability implications on the part of the financial service provider in rendering advice to clients is explained in writing

6.

- > The fundamentals of financial planning are explained in writing
- > Knowledge of financial planning principles is applied in practice
- > Assistance on the establishment of cash flow and budget control is given to clients in a real or simulated scenario
- > Assistance with cash management and budgeting on a broad strike basis is provided to clients in a real or simulated situation
- > Cash flow terms and applications are explained in writing and applied practically in the workplace
- > Analysis of the debt level of a client is conducted in a real or simulated situation

7.

- > An understanding of the Fundamental Accounting Concepts is demonstrated in writing
- > The relevance and meaning of financial analysis is understood and explained in writing
- > The transactions flow process through to the balance sheet and income statement is explained in writing and demonstrated in practice
- > The difference between a debit and a credit is understood and discussed orally
- > Assets, Liabilities, Income & Expenditure are differentiated and their relevance discussed orally
- > A Bank Statement is identified and its purpose explained orally
- > Bank Statement is reconciled with discrepancies identified and resolved
- > Knowledge of the types of credit available to clients i.e. loans, bonds, credit cards, overdrafts, etc. is

demonstrated with examples of which product is best suited to which type of client

- > A client is assisted in identifying the effects of poor credit management on his/her personal situation
- > Basic financial data is interpreted through research and practical examples
- > The difference between income and expenditure is identified and explained in writing
- > Income and expenditure are accounted for correctly in practical examples
- > Simple financial ratios are identified and applied in simulated or real situations

8.

> An understanding of investments is demonstrated by listing, explaining and using the following in practical examples:

- Investment vehicles - Bonds, Treasury Bills, Equities, Unit Trusts, Deposits etc
 - Insurance vehicles - annuities, endowments etc
 - Investment categories - cash reserves, fixed income, equity, property, hard assets or other direct investment
 - Types of equity investment structures ranging from fixed deposits to hedge funds, futures and options, multi manager and share portfolio principles
 - Investment terms and concepts
 - Terms and concepts relating to risk and return
 - Dividend yields
- > Correct terminology is used when dealing with investments either orally or in writing
- > The nature, role and responsibilities of the Stock Exchange are understood and discussed orally

9.

- > The different types of business entities are identified and the characteristics and advantages and disadvantages of each are explained with examples
- > The properties of a partnership, close corporation, companies (public and private) and a trust are listed in writing
- > The strengths and weaknesses and requirements of the various types of business are discussed and explained with practical examples
- > The purpose and context of a business plan is explained verbally

10.

- > The Code of conduct and ethics as it relates to corporate and personal financial planning is studied and discussed orally
- > Compliance with of the Code of Banking Practice is explained and the Code is applied in daily practice when dealing with customers
- > The consequences of non-adherence to the Code of conduct and ethics is identified and explained in writing

11.

- > The General Code of FAIS regulations is discussed verbally
- > The Specific Code of FAIS regulations is discussed verbally
- > Compliance with these codes in terms of providing financial and banking services in general is explained and applied in practice
- > The consequences of non-adherence to these codes are identified and explained in writing

12.

- > Rules and regulations contained in legislation and codes of practice such as FAISB, Code of Banking Practice, PPR and FICA are complied with in practice when giving corporate financial advice
- > The relevance of holding property title in the context of the corporate financial planning environment is explained in writing
- > The functions and roles of the following key players are briefly explained in writing:
- Life Offices Association
 - Banking Council
 - The SA Reinsurance Offices Association
 - SA Insurance Brokers Association
 - Life Underwriters Association of SA
 - Institute of Bankers
 - Insurance Brokers Council
 - The Financial Intermediaries Federation of SA
 - Insurance Institute of SA

- Financial Planning Institute
- Institute of Retirement Funds
- Financial Services Board
- The Banking Ombudsman
- The Life Assurance Ombudsman
- The Association of Collective Investments
- Department of Health (in terms of Category I - 1.11: Health service benefits)

- > Knowledge of the corporate financial planning market is demonstrated using practical scenarios
- > Local market, distribution channels and product offerings are discussed and explained with practical examples
- > Knowledge and understanding of sales and service delivery best practices in the market and how financial services companies fare against these benchmarks are applied in practice

Elective:

Learners will be required to do a practical assignment/case study in which the following aspects are described:

- > Nature of the product/investment vehicle
- > Advantages and disadvantages of the product/ investment vehicle
- > Potential clients
- > Preferred sales method and sales channels

Integrated Assessment:

Assessment of competence will be done through a combination of formative and summative assessment methodologies, tools and procedures, which will not discriminate against learners in an unjust or invalid way. Formative assessment will integrate theory with practice, with much of the transfer of skills being conducted in a real or simulated workplace environment. Assessment practices must be fair, transparent, valid and reliable.

The focus of assessment must be on the assessment of the learning outcomes rather than learning outputs. The purpose is to determine whether the outcomes have been attained. Situations should present a wide range of options. Applications should require significant choices from a wide range of procedures and in a number of contexts.

- > Learning, teaching and assessment are inextricably linked. Where appropriate, assessment of knowledge, skills, attitudes and values should be integrated.
- > Assessment has a formative monitoring function. Formative assessment should be used to assess gaps in the learner's skill and knowledge and to indicate where there is a need for expanded opportunities. The goal is to promote learning and to assess the efficacy of the teaching and learning process. Feedback from assessment informs teaching and learning and allows for the critique of outcomes, methodology and materials. Formative assessment is diagnostic and as such, it should guide the learner and the trainer. It is continuous and is used to plan appropriate learning experiences to meet the learner's needs. It provides information about problems experienced at different stages in the learning process. As it is criterion referenced, if the learner has met the assessment criteria, he/she has achieved the outcomes.
- > Assessment should also have a summative component. Summative assessment may be used on completion of specific exit level outcomes and is also required on completion of all the exit level outcomes as an integrated whole before the Qualification can be awarded.
- > A variety of methods must be used in assessment and tools and activities must be appropriate to the context in which the learner is working. Assessment should take place in an authentic context as far as is possible. Where it is not possible to assess competence in the workplace, simulations, case studies and other similar techniques should be used to provide a context appropriate to the assessment.
- > Integration implies that theoretical and practical components should, where possible, be assessed together.
- > Integrative techniques should be used to assess applied competence. Learners should be required to demonstrate that they can perform the outcomes with understanding and insight
- > Assessment should ensure that all exit level Outcomes and Critical Cross-Field Outcomes are evaluated. Assessment of the Critical Cross-Field Outcomes should be integrated with the assessment of the exit level outcomes. The Critical Cross-Field Outcomes are implicit in the learning and assessment programmes

should be designed to extend and further reflect the integration.

While the retention of credits for learning successfully completed is difficult with a non-unit standards based qualification, learners completing learning and demonstrating competence through formative assessment will be credited with such learning, and will be credited with it should the learning be recommenced. Direct portability of such credits into another qualification will be difficult

INTERNATIONAL COMPARABILITY

This qualification is not benchmarked to any current overseas qualification as no similar qualification has been implemented in the United Kingdom or Australia, as the focus of this qualification is on compliance with specific legislation in South Africa relating to the financial services sector in general and the banking sector in particular. It forms part of a learning pathway of qualifications in banking which are based on standards that have been benchmarked against qualifications in the UK. It is felt that this qualification is equal in standard to those in banking already registered by the SGB for Financial Services and would equate well with any similar qualification internationally were such a qualification developed.

ARTICULATION OPTIONS

This Qualification articulates horizontally with the following qualifications:

- > National Certificate in Financial Planning NQF Level 5
- > National Certificate in Banking (NQF level 5)
- > The National Certificate in Financial Services: Wealth Management: NQF Level 5

Vertical articulation is possible with the following qualifications:

- > Bachelors Degree in Banking
- > Advanced Diploma in Financial Planning: Level 6
- > National Certificate in Financial Markets: Level 6
- > In terms of the specialist areas of Category I of the Fit and Proper regulations, learners may also, on completion, access qualifications offered by the Institute of Financial Markets (RPE examinations) as well as SAFEX relating to foreign currency trading and investments

MODERATION OPTIONS

- > Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor with a relevant Education and 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 ETQA or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- > Formative assessment will be conducted internally by the provider with moderation being done by the relevant Education and Training Quality Assurance (ETQA) Body or by an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- > Moderation of assessment will be overseen by the relevant ETQA 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 at exit points of the Qualification, unless ETQA policies specify otherwise.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

For an applicant to register as an assessor for this Qualification, the applicant should:

- > Hold at a Banking or Financial Services qualification that is at least one level above this one i.e. at NQF level 6 or above

- > Have workplace experience in the banking sector or other any sector in the financial services field
- > Be declared competent in all the outcomes of the National Assessor Unit Standards as stipulated by the South African Qualifications Authority (SAQA).

NOTES

N/A

UNIT STANDARDS

(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

No. 1640

7 November 2003



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

1

Demonstrate knowledge of the water cycle

SAQA US ID		UNIT STANDARD TITLE	
113933		Demonstrate knowledge of the water cycle	
SGB NAME		ABET BAND	PROVIDER NAME
SGB Water Sector		Undefined	
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Physical Planning, Design and Management	
UNIT STANDARD CODE	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
PPC-CEC-0-SGB WS	Regular	Level 1	4
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

A qualifying learner in combination with context expertise standard(s) will be able to explain the elements of the water cycle to gain a broad understanding of water and water sources. This knowledge will equip the learner with the foundational knowledge and understanding of water that is required to function effectively within the water sector. This competence will enable the learner to value water as a scarce resource and share this knowledge to improve community understanding of the importance of conserving water resources. In acquiring this competence the qualifying learner will lay a good foundation for future learning and action, and better understand the broader context of water.

LEARNING ASSUMED TO BE IN PLACE

Ability to read, write and communicate at ABET level 3 or equivalent.

UNIT STANDARD RANGE

Elements of the water cycle

> Evaporation, cloud formation, precipitation, ground water, rivers, oceans.

Water uses

> Uses as defined in section 21 of the National Water Act e.g. discharge, storage.

Water users

> Domestic, industrial (includes mining), agricultural (irrigation, livestock watering and aquaculture) and recreation.

Provision of bulk infrastructure

> Water needs analysis, survey, environmental impact study, planning, design, costing, construction, operation and maintenance.

Distribution systems

> Piped systems, water tanks, boreholes, rainwater tanks, springs, reservoirs and reticulation systems.

Causes of water loss/ wastage

> Leaking taps / cisterns, taps not turned off, leaking or broken pipes, overflowing water tanks, over watering of gardens, meter errors, leaking reticulation system etc.

Sources of water pollution

> Washing of clothes / dishes in streams, contamination by human and animal faeces, discharges from factories (including wastewater works), oil spills, solvent spills, solid waste dumps.

Impact of water pollution

> Imbalance in biological life, human and animal illness, taste, colour and odour, limited access to safe drinking water.

Methods for preventing water pollution

> Education, maintenance and correct use of infrastructure, (including correct operation of water and wastewater treatment works), housekeeping, observation, reporting to relevant authority.

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:**SPECIFIC OUTCOME 1**

Identify and explain the elements of the water cycle.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The water cycle is drawn, including all the elements.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. All elements of the water cycle are identified and explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 2**

Identify and explain water users and uses.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA**

ASSESSMENT CRITERION 1

1. Water uses are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Water users in terms of water quality guidelines are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 3**

Explain the socio-economic impact of water.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The effects of droughts and flooding on communities are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. The importance of access to safe drinking water is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. The principle of charging for water consumption is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. The concept and limitation of free basic water is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 5

5. Impacts of water users on the environment are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 4**

Explain the need for sustainable water resources.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The impact of seasonal fluctuations on sustainability is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. The control of floods is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. The management of the effects of drought is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. The phases of a project cycle on the provision of bulk infrastructure are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 5**

5. Different distribution systems for safe drinking water are identified and discussed.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

SPECIFIC OUTCOME 5

Explain the importance of conserving water.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Causes and impact of water loss are described.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Preventative measures to control water loss are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Causes and impact of wastage of water are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. Preventative measures to control wastage of water are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 5**

5. Ways to prevent the wastage of water are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 6**

Identify possible sources of water pollution.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA**

ASSESSMENT CRITERION 1

1. Sources of water pollution are identified.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. The impact of water pollution on water resources is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Diseases caused by polluted water are identified and their symptoms explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. Methods for preventing water pollution are described.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS**

N/A

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

1. Elements of the water cycle.
2. Methods of water storage.
3. Water uses and water users.
4. Traditional and alternative methods of collecting of water.
5. Free basic water and the principle of charging for water.
6. The role of safe, clean water in the prevention of disease.
7. Pollution of water including ways to prevent pollution.
8. The weather cycle and its impact on water as a resource and on water services.
9. The importance of water in South Africa and its scarcity as a natural resource.
10. An understanding of the water services industry with regard to employment or entrepreneurial opportunities

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):**UNIT STANDARD CCFO IDENTIFYING**

> Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.

Assessment criteria: 6.1

> Sources of water pollution are identified.

UNIT STANDARD CCFO WORKING

> Work effectively with others as a member of a team, group, organisation, and community.

Assessment criteria: none

UNIT STANDARD CCFO ORGANIZING

> Plan, organise and manage oneself and one's activities responsibly and effectively.

Assessment criteria: none

UNIT STANDARD CCFO COLLECTING

> Collect, analyse, organise and critically evaluate information.

Assessment criteria: specific outcome 3, 5 and 6.1

> Explain the socio-economic impact of water.

> Explain the importance of conserving water.

> Sources of water pollution are identified.

UNIT STANDARD CCFO COMMUNICATING

> Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation.

Assessment criteria: All

UNIT STANDARD CCFO SCIENCE

> Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

Assessment criteria: none

UNIT STANDARD CCFO DEMONSTRATING

> Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Assessment criteria: All

UNIT STANDARD CCFO CONTRIBUTING**UNIT STANDARD ASSESSOR CRITERIA**

Learners could be assessed through the following methods:

> Oral or written questions

UNIT STANDARD NOTES

N/A



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

2

Demonstrate knowledge of sanitation and wastewater treatment

SAQA US ID		UNIT STANDARD TITLE	
113935		Demonstrate knowledge of sanitation and wastewater treatment	
SGB NAME		ABET BAND	PROVIDER NAME
SGB Water Sector		Undefined	
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Physical Planning, Design and Management	
UNIT STANDARD CODE		UNIT STANDARD TYPE	NQF LEVEL
PPC-PPD-0-SGB WS		Regular	Level 1
			CREDITS
			4
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

A qualifying learner in combination with context expertise standard(s) will be able to explain the basic operation of sanitation systems and the operation of a treatment works. This competence will enable the learner to assist in the operation of a wastewater treatment process. This will contribute to the creation of community awareness regarding the impact of sanitation on water use. Achieving this Unit Standard will provide foundational learning that will advance his / her own expertise and employability in the water and other related sectors.

LEARNING ASSUMED TO BE IN PLACE

Ability to read, write and communicate at ABET level 3 or equivalent.

UNIT STANDARD RANGE

Definition of Sanitation

> Management and disposal of waste from a human habitat including hygiene practices, infrastructure and health impact on the environment.

Sanitation services

> Collection, removal, disposal or treatment of human excreta, domestic wastewater, sewage and effluent.

Sanitation systems

> Pit latrines, bucket system, ventilated improved pit latrine (V.I.P.), reticulated, conservancy tanks, septic tanks and chemical toilets.

Basic sanitation systems

> Pit latrines and ventilated improved pit latrine (VIPs).

Elements of a wastewater treatment

> Screening (coarse and fine), activated works sludge plant, settling tanks, bio filters, disinfection, oxidation ponds, digesters, drying beds and grit removal.

Water and sanitation related diseases

> Water borne diseases (Typhoid Fever, Cholera and Bacillary Dysentery, diarrhoea), Parasitic diseases (Bilharzia), Tape, Hook and Round Worms.

UNIT STANDARD OUTCOME HEADER**Specific Outcomes and Assessment Criteria:****SPECIFIC OUTCOME 1**

Discuss sanitation.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The definition of sanitation is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. The definition of sanitation services is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Different types of sanitation systems are identified and discussed.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. The impact of sanitation systems on local water resources is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 5**

5. Limits of basic on site sanitation systems are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 6**

6. Use and operation of basic on site sanitation systems are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 7

7. Risks linked to more complex alternatives are listed.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 2**

Explain the need to treat wastewater.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The difference between grey water and wastewater is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. The purpose of treating wastewater is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Uses of treated wastewater are identified and explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 3**

Explain the operation of a wastewater treatment works.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The purpose of a wastewater treatment works is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 2

2. All the elements of a wastewater treatment works are drawn, labelled and their purpose is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Disposal of effluent, solids and sludge is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. Typical jobs and responsibilities on a wastewater treatment works are identified and explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 4**

Explain hygiene practices and sanitation and water related diseases.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Good personal hygiene practices are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Diseases related to water and sanitation are identified and discussed.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. The symptoms and treatment of water and sanitation related diseases are described.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 4

4. The significance of the proximity of sanitation structures to water courses is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS**

N/A

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

1. The definition of sanitation.
2. Sanitation systems including pit latrines, bucket systems, VIPs, reticulated systems, conservancy tanks, septic tanks and chemical toilets.
3. Basic wastewater treatment processes including the elements of the works.
4. Rights to basic sanitation.
5. Personal hygiene practices.
6. Water related diseases, symptoms and treatment including referral to health practitioners.

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):**UNIT STANDARD CCFO IDENTIFYING**

Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.

Assessment criteria:

Risk linked to more complex alternative are listed.

UNIT STANDARD CCFO WORKING

Work effectively with others as a member of a team, group, organisation, and community.

UNIT STANDARD CCFO ORGANIZING

Plan, organise and manage oneself and one's activities responsibly and effectively.

UNIT STANDARD CCFO COLLECTING

Collect, analyse, organise and critically evaluate information.

Assessment criteria:

- > The impact of sanitation systems on local water resources is explained.
- > Limits of basic on site sanitation systems are explained.
- > The significance of the proximity of sanitation structures to water courses is explained.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation.

Assessment criteria:

All.

UNIT STANDARD CCFO SCIENCE

Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

UNIT STANDARD CCFO DEMONSTRATING

Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Assessment criteria:

- > The impact of sanitation systems on local water resources is explained.
- > Disposal of effluent, solids and sludge is explained.
- > The significance of the proximity of sanitation structures to water courses is explained.

UNIT STANDARD CCFO CONTRIBUTING**UNIT STANDARD ASSESSOR CRITERIA**

N/A

UNIT STANDARD NOTES

N/A



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

3

Demonstrate knowledge of water and wastewater reticulation systems

SAQA US ID		UNIT STANDARD TITLE	
113936		Demonstrate knowledge of water and wastewater reticulation systems	
SGB NAME		ABET BAND	PROVIDER NAME
SGB Water Sector		Undefined	
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Civil Engineering Construction	
UNIT STANDARD CODE		UNIT STANDARD TYPE	NQF LEVEL
PPC-CEC-0-SGB WS		Regular	Level 1
			CREDITS
			5
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

A qualifying learner in combination with context expertise standard(s) will be able to explain the concepts and elements of water and wastewater reticulation systems. This competence will enable the learner to assist with the installation of such systems, read meters and explain water loss. This will contribute to the creation of community awareness regarding the importance of water use control and water as a scarce commodity. Achieving this Unit Standard will provide foundational learning that will advance his / her own expertise and employability in the water and other related sectors.

LEARNING ASSUMED TO BE IN PLACE

Ability to read, write and communicate at ABET level 3 or equivalent, numerate, an ability to add and subtract numbers.

UNIT STANDARD RANGE

Pipe types

> Plastic, steel, cast iron, copper, asbestos - cement, concrete and earthenware

Associated fittings

> Valves, bends, junctions, couplings, meters and manholes

Different types of on-site and bulk storage

> Rain water tank, elevated tanks and bulk reservoirs

Potential causes of water loss

> Meter disfunction, illegal connections, by-passes, vandalism, leaking pipes, leaking valves

Indicators of water loss

> Wet spots, visible leaks, dampness

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:**SPECIFIC OUTCOME 1**

Explain water and wastewater reticulation systems.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The concepts and purposes of water and wastewater reticulation are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. The difference between water and wastewater reticulation is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. The difference between wastewater reticulation and storm water systems is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 2**

Explain the elements of water and wastewater reticulation systems.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The elements of water and wastewater reticulation systems are identified.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Various pipe types and associated fittings are identified and their application is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 3

3. The purpose of a pump is described.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 3**

Demonstrate knowledge of the functioning of a water and wastewater reticulation system.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The concept of flow is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. The different types of on-site and bulk storage in water reticulation are identified and explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. The effect of restrictions and blockages in wastewater systems are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 4**

Read water meters on reticulation systems.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The units of measurement are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 2

2. The purpose of metering is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Meters are read accurately in accordance with work procedures.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. Meter readings are recorded accurately and handed over to the relevant person.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 5**

5. Problems are identified and appropriate action is taken in accordance with work procedures.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 5**

Explain the concept of water loss on a reticulation system.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Potential causes of water loss are identified and discussed.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Indicators of different types of water loss are identified.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

4

Demonstrate knowledge of water purification

SAQA US ID	UNIT STANDARD TITLE		
113937	Demonstrate knowledge of water purification		
SGB NAME	ABET BAND	PROVIDER NAME	
SGB Water Sector	Undefined		
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Civil Engineering Construction	
UNIT STANDARD CODE	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
PPC-CEC-0-SGB WS	Regular	Level 1	4
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

A qualifying learner in combination with context expertise standard(s) will be able to explain the elements of water purification and the purpose of the works. This competence will enable the learner to understand the purification process including the purpose of purifying water and alternative methods for making drinking water safe. This will contribute to creating community awareness regarding safe drinking water. In acquiring this competence the qualifying learner will lay a good foundation for future learning and action, and better understand the broader context of water quality and water purification.

LEARNING ASSUMED TO BE IN PLACE

Ability to read, write and communicate at ABET level 3 or equivalent, measuring skills.

UNIT STANDARD RANGE

Water sources.

Rain, sea, rivers, dams and ground water.

Indicators.

Colour, clarity, bacteriological tests, odour and taste.

Removal of suspended solids.

Filtration by means of cloth and/or sand.

Methods to make water safe.

Boil water, household bleach or chlorine tablets.

Processes of a water purification plant.

Inlet, coagulation, clarifier, filters, disinfection.

Jobs.

Water plant operator, cleaners, laboratory assistants, water plant supervisor and maintenance personnel.

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:**SPECIFIC OUTCOME 1**

Explain water sources.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Different water sources are named.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Uses of water from different water sources are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. The difference between potable and raw water is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. The difference between ground water and surface water is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 2**

Explain the need to purify water.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The purpose of purifying water is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

UNIT STANDARD CCFO ORGANIZING

Plan, organise and manage oneself and one's activities responsibly and effectively.

UNIT STANDARD CCFO COLLECTING

Collect, analyse, organise and critically evaluate information.

Assessment criteria: Indicators of the need to purify water are identified and explained.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation.

UNIT STANDARD CCFO SCIENCE

Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

Assessment criteria: Demonstrate field methods for making drinking water safe for human consumption.

UNIT STANDARD CCFO DEMONSTRATING

Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Assessment criteria: Demonstrate field methods for making drinking water safe for human consumption and Describe the operation of a water purification plant.

UNIT STANDARD CCFO CONTRIBUTING**UNIT STANDARD ASSESSOR CRITERIA**

N/A

UNIT STANDARD NOTES

N/A



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

5

Operate basic water related mechanical and electrical equipment

SAQA US ID	UNIT STANDARD TITLE		
113941	Operate basic water related mechanical and electrical equipment		
SGB NAME	ABET BAND	PROVIDER NAME	
SGB Water Sector	Undefined		
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Civil Engineering Construction	
UNIT STANDARD CODE	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
PPC-CEC-0-SGB WS	Regular	Level 1	4
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

A qualifying learner in combination with context expertise standard(s) will be able to identify and operate basic water related mechanical and electrical equipment in accordance with safety procedures. This competence will enable the learner to identify energy units, drives, and pumps in the workplace and complete pre-start checks and detect irregularities on mechanical equipment. In acquiring this competence the qualifying learner will lay a good foundation for future learning and action. Achieving this unit standard will enhance the efficiency of the qualifying learner and provide foundational learning that will advance his / her own expertise and employability in water and other related sectors.

LEARNING ASSUMED TO BE IN PLACE

Ability to read, write and communicate at ABET level 3 or equivalent.

UNIT STANDARD RANGE

Energy units

> Electrical motors (single phase and three phase), internal combustion engines (diesel and petrol), windmill, steam engines and manual operation (hand pump)

Drives

> Direct drive (tyre coupling, pin coupling, gearbox, gear coupling, yoke) and belt drive (V-belt or flat belt)

Pumps

> Centrifugal, reciprocating and screw

Pre-start check

> Grease, check fuel, oil and water levels and replenish, check and clean air filter, check flat / V belt tension

Indicators of irregularities

> Not pumping, vibration, leaks, temperature, noise, high or low currents and odour

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:**SPECIFIC OUTCOME 1**

Identify and explain the purpose of water related mechanical and electrical equipment.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The purpose of an energy unit is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Four different types of energy units are named.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. The purpose of a drive is explained and two types of drives are named.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. The purpose of pumps is explained and three types of pumps are named.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 2**

Identify mechanical and electrical equipment in the workplace.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Various types of energy unit are identified in the workplace and each application is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 2

2. Various types of drives are identified in the workplace and each application is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Various types of pumps are identified in the workplace and each application is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 3**

Operate mechanical equipment in accordance with work procedures.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Personal safety practices are applied in accordance with work procedures.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Pre-start checks are completed in accordance with work procedures.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Start up procedure is demonstrated.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. Proper functioning of mechanical equipment is monitored and indicators of irregularities reported to the relevant person.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 5

5. Shut-down procedures are demonstrated in accordance with work procedures.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 4**

Demonstrate knowledge of electrical equipment in the workplace.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The respective circuit breakers for electrical equipment are identified and linked to appropriate pumpset.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Start up and shut down procedures are demonstrated in accordance with work procedures.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Functioning of electrical equipment including amps and volts is monitored and irregularities are reported to the relevant person.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 4**

4. Dangerous situations and practices are identified and reported.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS**

N/A

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

- > Workplace policies and procedures.
- > Safety procedures when operating mechanical and electrical equipment. (Moving machinery, guards and covers)
- > Lockout system and procedures.
- > Maintenance procedures for mechanical equipment.

- > Electrical circuits.
- > The purpose of relevant electrical equipment.
- > The basic principles of single phase and three phase circuitry.
- > Electrical load indicators. (Amps and volts)

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):**UNIT STANDARD CCFO IDENTIFYING**

Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.

Assessment criteria:

- > Proper functioning of mechanical equipment is monitored and indicators of irregularities reported to the relevant person.
- > Functioning of electrical equipment including amps and volts is monitored and irregularities are reported to the relevant person.
- > Dangerous situations and practices are identified and reported.

UNIT STANDARD CCFO WORKING

Work effectively with others as a member of a team, group, organisation, and community.

Assessment criteria:

- > Operate mechanical equipment in accordance with work procedures.
- > Demonstrate knowledge of electrical equipment in the workplace.

UNIT STANDARD CCFO ORGANIZING

Plan, organise and manage oneself and one's activities responsibly and effectively.

Assessment criteria: none

UNIT STANDARD CCFO COLLECTING

Collect, analyse, organise and critically evaluate information.

Assessment criteria:

- > Proper functioning of mechanical equipment is monitored and indicators of irregularities reported to the relevant person.
- > Functioning of electrical equipment including amps and volts is monitored and irregularities are reported to the relevant person.
- > Dangerous situations and practices are identified and reported.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation.

> All assessment criteria.

UNIT STANDARD CCFO SCIENCE

Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

Assessment criteria: specific outcome 3 and 4

- > Operate mechanical equipment in accordance with work procedures.
- > Demonstrate knowledge of electrical equipment in the workplace.

UNIT STANDARD CCFO DEMONSTRATING

Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Assessment criteria: none

UNIT STANDARD CCFO CONTRIBUTING

UNIT STANDARD ASSESSOR CRITERIA

N/A

UNIT STANDARD NOTES

N/A



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

6.

Read water meters

SAQA US ID	UNIT STANDARD TITLE		
113934	Read water meters		
SGB NAME	ABET BAND	PROVIDER NAME	
SGB Civil Engineering Construction	Undefined		
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Civil Engineering Construction	
UNIT STANDARD CODE	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
PPC-CEC-0-SGB CEC	Regular	Level 2	8
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

The qualifying learner achieving this unit standard in combination with context expertise standard(s) will be able to identify various types of meters, explain the direction of flow through meters, calculate consumption, identify leaks and read various meter dials. This competence will enable the learner to identify problems on a water reticulation system. This competence will assist in the operation of the network and contribute towards the recovery of finance for the service offered. In acquiring this competence the qualifying learner will lay a good foundation for future learning and action, and better understand the broader context of own work. Achieving this unit standard will enhance the employability of the qualifying learner or provide entrepreneurial opportunities in the water sector.

LEARNING ASSUMED TO BE IN PLACE

Communication and literacy skills at ABET level 3, numerate, basic calculations.

UNIT STANDARD RANGE

Reports

Time sheets, logbooks, injury reports, meter reading reports, complaint report sheets,

Equipment and tools

Valve cover lifters, man hole cover lifters, hammer, screw driver, torch, keys, dog and snake repellents, hand held terminals, water pumps.

Causes of high / low consumption

Illegal water connections, broken meter seals, turn around of water meters, use of magnets on magnetic meters, meters that have turned over.

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:**SPECIFIC OUTCOME 1**

Identify water meters and explain their working principles.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Identify piston type meters and explain the measuring cycle.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 2**

2. Identify multi-jet meters and explain the measuring cycle.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 3

3. Identify bulk meters and explain the various meters used for bulk supply of water.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 4**

4. Identify electromagnetic flow meters and explain the measuring cycle.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 5**

5. Explain the direction of flow of all water meters and the importance of the unique meter number.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

SPECIFIC OUTCOME 2

Read various meter dials.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Read different counters accurately.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 2**

2. Read small dials on meters accurately.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 3

3. Record figures accurately and neatly.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 3**

Plan meter reading route.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Township plans, including scale, are explained and stand and postal numbers are identified.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 2

2. Meter reading route is planned in a logical and cost effective manner.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. Appropriate equipment and tools are collected.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 4**

Record meter readings.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA**

ASSESSMENT CRITERION 1

1. The correct meter is verified at each property.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 2**

2. The correct sequencing methods necessary to effectively read meters are explained.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. Tools and equipment are used safely and in the correct manner.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 4

4. Data is recorded accurately in accordance with work procedures.

ASSESSMENT CRITERION NOTES

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

Integrated Assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION 5

5. Complaints and queries are recorded and reported in accordance with work procedures.

ASSESSMENT CRITERION NOTES

Integrated Assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 6**

6. Leak on premises are detected and the responsible party is identified.

ASSESSMENT CRITERION NOTES

Integrated Assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 7

7. Electronic hand held meter reading units are used effectively.

ASSESSMENT CRITERION NOTES

Integrated Assessment

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ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 5**

Identify tampered council meters and calculate water.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. High and low consumption is calculated.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 2

2. Causes of high / low consumption are identified.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. Appropriate corrective action is taken in accordance with work procedures.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE**UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS**

1. Anyone assessing a learner or moderating the assessment of a learner against this unit standard must be registered as an assessor with the relevant ETQA.
2. Any institution offering learning that will enable the achievement of this unit standard must be accredited as a provider with the relevant ETQA.
3. Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQA's policies and guidelines for assessment and moderation.
4. 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 as well as the integrated competence described in the qualification.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

1. Work policies and procedures.
2. The purpose of a water meter.
3. Safety legislation and safety procedures.
4. The value of accurate and complete records
5. Units of measuring water.
6. Various fractions of a unit of water.
7. The piping installation requirements needed to accurately register the volume of water.
8. The importance of flushing a water system prior to opening the water.
9. The correct opening speeds of water.
10. Pipe work assembly details of combination or bulk meter installation.
11. Recording of changed water meters.

12. Closing readings on removed meters and opening readings on newly installed meters.
13. Location codes.
14. Allocation of new meters to stands.
15. Allocation of reading routes.
16. Position of meter using GPS.
17. Electronic hand held meter reading units.
18. Communication with consumers.

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):**UNIT STANDARD CCFO IDENTIFYING**

Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.

Assessment criteria:

- > Leak on premises are detected and the responsible party is identified.
- > Causes of high / low consumption are identified.

UNIT STANDARD CCFO WORKING

Work effectively with others as a member of a team, group, organisation, and community.

Assessment Criteria:

- > All assessment Criteria.

UNIT STANDARD CCFO ORGANIZING

Plan, organise and manage oneself and one's activities responsibly and effectively.

Assessment Criteria:

- > Township plans, including scale, are explained and stand and postal numbers are identified.
- > Meter reading route is planned in a logical and cost effective manner.
- > Appropriate equipment and tools are collected.

UNIT STANDARD CCFO COLLECTING

Collect, analyse, organise and critically evaluate information.

Assessment Criteria:

- > Data is recorded accurately in accordance with work procedures.
- > Complaints and queries are recorded and reported in accordance with work procedures.
- > High and low consumption is calculated.
- > Causes of high / low consumption are identified.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation.

Assessment Criteria:

- > All assessment criteria.

UNIT STANDARD CCFO SCIENCE

Use science and technology effectively and critically, showing responsibility towards the environment and

health of others.

Assessment Criteria:

- > The correct sequencing methods necessary to effectively read meters are explained.
- > Tools and equipment are used safely and in the correct manner.
- > Electronic hand held meter reading units are used effectively.

UNIT STANDARD CCFO DEMONSTRATING

Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Assessment Criteria:

- > Leak on premises are detected and the responsible party is identified.
- > Causes of high / low consumption are identified.

UNIT STANDARD CCFO CONTRIBUTING

UNIT STANDARD ASSESSOR CRITERIA

N/A

UNIT STANDARD NOTES

N/A



Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY**UNIT STANDARD:**

7

Conduct minor maintenance tasks on a water supply system

SAQA US ID	UNIT STANDARD TITLE		
113938	Conduct minor maintenance tasks on a water supply system		
SGB NAME		ABET BAND	PROVIDER NAME
SGB Water Sector		Undefined	
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Physical Planning, Design and Management	
UNIT STANDARD CODE	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
PPC-PPD-0-SGB WS	Regular	Level 1	2
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

The qualifying learner achieving this unit standard in combination with context expertise standard(s) will be able to identify different types of valves and replace washers on a water supply system. This competence will enable the learner to repair leaks on a water system. This competence will assist in the reduction in the water loss and contribute to a reduced water account. In acquiring this competence the qualifying learner will lay a good foundation for future learning and action, and better understand the broader context of own work. Achieving this unit standard will enhance the employability of the qualifying learner or provide entrepreneurial opportunities in the water sector.

LEARNING ASSUMED TO BE IN PLACE

None

UNIT STANDARD RANGE

Types of valves

Stop cocks, leaking ball valve, non syphonic cistern valve, syphonic valve

Equipment and tools

Spanners, screw driver, vice grips, water resistant grease, re-seating tool

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:**SPECIFIC OUTCOME 1**

Replace the washer in a leaking tap.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA**

ASSESSMENT CRITERION 1

1. The water supply system is turned off.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 2**

2. The tap is opened fully and the tap spindle is removed.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. The tap washer is removed and replaced.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 4

4. The tap body seat is checked for damage.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 5**

5. The tap is reassembled and checked for leaks.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 6**

6. Problems are identified and appropriate action is taken in accordance with work procedures.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 2**

Re-seat a leaking tap.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA**

ASSESSMENT CRITERION 1

1. The water supply system is turned off.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 2**

2. The tap is opened fully and the tap spindle is removed.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. The tap seat is visually checked.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 4

4. The tap seat is ground until all deformities are removed.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 5**

5. The tap is reassembled and checked for leaks.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 6**

6. Problems are identified and appropriate action is taken in accordance with work procedures.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of unit standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 3**

Replace washers in different types of valves.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA**

ASSESSMENT CRITERION 1

1. The water supply is turned off.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 2**

2. The valve is stripped in accordance with work procedures.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. The valve washer is removed and replaced.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 4

4. The valve is re-assembled and checked for leaks.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 5**

5. Problems are identified and appropriate action is taken in accordance with work procedures.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 4**

Use and maintain tools safely.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Required tools are available on site.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 2

2. Tools are used safely in accordance with work procedures.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. Tools are cleaned and stored in accordance with work procedures.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 4**

4. Damaged or broken tools and equipment are repaired, replaced or reported in accordance with work procedures.

ASSESSMENT CRITERION NOTES**Integrated Assessment**

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ASSESSMENT CRITERION RANGE**UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS**

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4. 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 as well as the integrated competence described in the qualification.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

Learners should have a knowledge and understanding of:

1. Work policies and procedures.
2. The use and maintenance of tools and equipment.
3. Safety requirements.
4. Washers.
5. Valves.

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING

> Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.

Assessment criteria: 1.6, 2.6, 3.5 and 4.4

- > Problems are identified and appropriate action is taken in accordance with work procedures.
- > Problems are identified and appropriate action is taken in accordance with work procedures.
- > Problems are identified and appropriate action is taken in accordance with work procedures.
- > Damaged or broken tools and equipment are repaired, replaced or reported in accordance with work procedures.

UNIT STANDARD CCFO WORKING

> Work effectively with others as a member of a team, group, organisation, and community.

Assessment criteria: All

UNIT STANDARD CCFO ORGANIZING

> Plan, organise and manage oneself and one's activities responsibly and effectively.

Assessment criteria: 4.1 and 4.2

- > Required tools are available on site.
- > Tools are used safely in accordance with work procedures.

UNIT STANDARD CCFO COLLECTING

> Collect, analyse, organise and critically evaluate information.

Assessment criteria: 1.6, 2.6, 3.5 and 4.4

- > Problems are identified and appropriate action is taken in accordance with work procedures.
- > Problems are identified and appropriate action is taken in accordance with work procedures.
- > Problems are identified and appropriate action is taken in accordance with work procedures.
- > Damaged or broken tools and equipment are repaired, replaced or reported in accordance with work procedures.

UNIT STANDARD CCFO COMMUNICATING

> Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation.

Assessment criteria: All

UNIT STANDARD CCFO SCIENCE

> Use science and technology effectively and critically, showing responsibility towards the environment and

health of others.

Assessment criteria: All

UNIT STANDARD CCFO DEMONSTRATING

> Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Assessment criteria: 1.6, 2.6 and 3.5

> Problems are identified and appropriate action is taken in accordance with work procedures.

> Problems are identified and appropriate action is taken in accordance with work procedures.

> Problems are identified and appropriate action is taken in accordance with work procedures.

UNIT STANDARD CCFO CONTRIBUTING

UNIT STANDARD ASSESSOR CRITERIA

N/A

UNIT STANDARD NOTES

N/A



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

8

Interact with community members on water related matters

SAQA US ID	UNIT STANDARD TITLE		
113939	Interact with community members on water related matters		
SGB NAME		ABET BAND	PROVIDER NAME
SGB Water Sector		Undefined	
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Civil Engineering Construction	
UNIT STANDARD CODE	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
PPC-CEC-0-SGB WS	Regular	Level 1	4
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

A qualifying learner in combination with context expertise standard(s) will be able to identify water user needs and expectations, explain the purpose and establishment of a community committee and communicate effectively with community members. This will contribute towards improved communication and participation in community projects by community members. This competence will advance the learner's own expertise and employability in both the water sector and other related jobs.

LEARNING ASSUMED TO BE IN PLACE

Ability to read, write and communicate at ABET level 3 or equivalent.

UNIT STANDARD RANGE

Community member

Adult, child, male, female, traditional leader, role player in community, political or church leader.

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Discuss water user needs and expectations within a community.

OUTCOME NOTES

OUTCOME RANGE

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. The need for community participation is explained

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit Standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of Unit Standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of Unit Standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 2**

2. Local culture and customs in own community are explained.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit Standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of Unit Standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of Unit Standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. Water user needs and expectations are identified and discussed in own community.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit Standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of Unit Standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of Unit Standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 4

4. Water users needs and expectations are reported to the relevant person.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 2**

Explain the purpose and roles of a community committee.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. The purpose of a community committee is explained.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 2

2. The constituents of a community committee are identified.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit Standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of Unit Standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of Unit Standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. The role of each constituent member is explained.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 3**

Explain the election process for a community committee.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA**

ASSESSMENT CRITERION 1

1. The election process is explained.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 2**

2. Alternative voting processes are explained.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. Most appropriate voting process in own community is explained and reasons are given.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 4

4. Frequency of elections is explained.

ASSESSMENT CRITERION NOTES

Integrated assessment

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ASSESSMENT CRITERION RANGE**SPECIFIC OUTCOME 4**

Communicate appropriately with community members.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Communication with community members is polite and friendly.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit Standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of Unit Standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of Unit Standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE

ASSESSMENT CRITERION 2

2. Considerations when communicating with different types of users from the community are explained.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit Standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of Unit Standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of Unit Standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**ASSESSMENT CRITERION 3**

3. Communication is clear and appropriate language is used.

ASSESSMENT CRITERION NOTES

Integrated assessment

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit Standards being assessed. Assessors must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge by developing assessment activities and tools, which are appropriate to the contexts in which the learners are working. These activities and tools may include self-assessment, peer assessment, formative and summative assessment. It may be more effective and efficient to assess a number of Unit Standards together in an integrated way, thus reducing the overall number of assessments and ensuring that commonalities that exist between a number of Unit Standards are captured in a way that makes sense for assessment.

ASSESSMENT CRITERION RANGE**UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS**

1. Anyone assessing a learner or moderating the assessment of a learner against this Unit Standard must be registered as an assessor with the relevant ETQA.
2. Any institution offering learning that will enable the achievement of this Unit Standard must be accredited as a provider with the relevant ETQA.
3. Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQA's policies and guidelines for assessment and moderation.
4. 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 as well as the integrated competence described in the Qualification.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

Learners should have a knowledge and understanding of:

1. Rights and responsibilities of users in relation to water.
2. Legislated minimum standards of water supply.
3. The importance of reporting, transfer and dissemination of information.
4. Knowledge of social, cultural and community structures.
5. Knowledge of socio-economic status of communities.
6. Water user needs and expectations within the community.

- 7. The importance of communication within the community.
- 8. Committee structure, constituents, election and purpose.

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):**UNIT STANDARD CCFO IDENTIFYING**

Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.

UNIT STANDARD CCFO WORKING

Work effectively with others as a member of a team, group, organisation, and community.

UNIT STANDARD CCFO ORGANIZING

Plan, organise and manage oneself and one's activities responsibly and effectively.

UNIT STANDARD CCFO COLLECTING

Collect, analyse, organise and critically evaluate information.

Assessment criteria: Considerations when communicating with different types of users from the community are explained.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation.

UNIT STANDARD CCFO SCIENCE

Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

UNIT STANDARD CCFO DEMONSTRATING

Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

UNIT STANDARD CCFO CONTRIBUTING**UNIT STANDARD ASSESSOR CRITERIA**

N/A

UNIT STANDARD NOTESN/A



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

9

Demonstrate basic water related sampling techniques

SAQA US ID	UNIT STANDARD TITLE		
113940	Demonstrate basic water related sampling techniques		
SGB NAME	ABET BAND	PROVIDER NAME	
SGB Water Sector	Undefined		
FIELD DESCRIPTION		SUBFIELD DESCRIPTION	
Physical Planning and Construction		Physical Planning, Design and Management	
UNIT STANDARD CODE	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
PPC-PPD-0-SGB WS	Regular	Level 1	3
REGISTRATION START DATE	REGISTRATION END DATE	REGISTRATION NUMBER	SAQA DECISION NUMBER

PURPOSE OF THE UNIT STANDARD

A qualifying learner in combination with context expertise standard(s) will be able to prepare water sample containers, take water samples, use water sampling equipment, store water samples and complete relevant reports. This competence will enable the learner to take water samples at pre determined sampling points and understand the importance of the sampling process. This competence will provide the learner with the foundational knowledge required to be able to operate effectively when taking water samples. This will assist in ensuring that water resources are accurately monitored in terms of water quality. In acquiring this competence the qualifying learner will lay a good foundation for future learning and action and provide the learner with entrepreneurial skills that are useful in the water sector.

LEARNING ASSUMED TO BE IN PLACE

Ability to read, write and communicate at ABET level 3 or equivalent, numerate.

UNIT STANDARD RANGE

Personal protective equipment

> Boots, overalls, gloves, mask and goggles.

Sample container

> Microbiological sample container, chemical sample container (glass and plastic).

Sampling equipment

> Bucket, rope, cooler box, sample container, sample stick and bottle.

Water related samples

> River, potable water, sludge, wastewater and industrial effluent.

Responsible person

> Laboratory, person who will transport samples to laboratory.

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:**SPECIFIC OUTCOME 1**

Wear appropriate personal protective clothing.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Personal protective equipment is worn in accordance with legislation and work procedures.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Damaged personal protective equipment is noted and corrective action is explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 2**

Prepare sample containers and sampling equipment.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Different sampling containers are identified and their uses are explained.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Different sampling containers are cleaned and labelled in accordance with work procedures.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Correct sampling equipment is collected and checked.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 4

4. Damaged sampling equipment is reported to the relevant person.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 3**

Take water related samples.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Water sampling techniques are demonstrated in accordance with standard methods.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 2**

2. Problems are identified and appropriate corrective action is demonstrated.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****ASSESSMENT CRITERION 3**

3. Samples are stored appropriately.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****SPECIFIC OUTCOME 4**

Deliver samples to responsible person in accordance with work policies and procedures.

OUTCOME NOTES**OUTCOME RANGE****ASSESSMENT CRITERIA****ASSESSMENT CRITERION 1**

1. Samples are handed over to the responsible person within the required time frames.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE**

ASSESSMENT CRITERION 2

2. Reports are complete and accurate and submitted to the responsible person.

ASSESSMENT CRITERION NOTES**ASSESSMENT CRITERION RANGE****UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS**

N/A

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

1. Cleaning of sample containers.
2. Sterilisation techniques for equipment used for microbiological sampling.
3. Water related sampling techniques, including standard methods for taking clean and contaminated water samples.
4. Safety procedures related to taking water samples.
5. Sample bottles and sample equipment.
6. The purpose and importance of water related sampling.
7. The consequences of not taking regular samples.
8. Work policies and procedures.

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):**UNIT STANDARD CCFO IDENTIFYING**

Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.

Assessment criteria:

- > Damaged personal protective equipment is noted and corrective action is explained.
- > Damaged sampling equipment is reported to the relevant person.
- > Problems are identified and appropriate corrective action is demonstrated.

UNIT STANDARD CCFO WORKING

Work effectively with others as a member of a team, group, organisation, and community.

Assessment criteria:

All.

UNIT STANDARD CCFO ORGANIZING

Plan, organise and manage oneself and one's activities responsibly and effectively.

Assessment criteria:

- > Different sampling containers are cleaned and labelled in accordance with work procedures.
- > Correct sampling equipment is collected and checked.

UNIT STANDARD CCFO COLLECTING

Collect, analyse, organise and critically evaluate information.

Assessment criteria:

- > Damaged personal protective equipment is noted and corrective action is explained.
- > Damaged sampling equipment is reported to the relevant person.
- > Problems are identified and appropriate corrective action is demonstrated.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation.

Assessment criteria:

All.

UNIT STANDARD CCFO SCIENCE

Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

Assessment criteria:

> Different sampling containers are cleaned and labelled in accordance with work procedures.

UNIT STANDARD CCFO DEMONSTRATING

Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Assessment criteria:

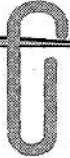
> Water sampling techniques are demonstrated in accordance with standard methods.

UNIT STANDARD CCFO CONTRIBUTING**UNIT STANDARD ASSESSOR CRITERIA**

N/A

UNIT STANDARD NOTES

N/A



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