DEPARTMENT OF WATER AND SANITATION

NO. 3434 **19 May 2023**

No. R. 2022

NATIONAL WATER ACT, 1998 AS AMENDED (THE "ACT")

THE REVISION OF REGULATIONS REGARDING THE PROCEDURAL REQUIREMENTS FOR WATER USE LICENCE APPLICATIONS AND AMENDMENTS

I, **Senzo Mchunu**, Minister of Water and Sanitation, in terms of section 69(1) of the National Water Act, 1998 (Act No. 36 of 1998), hereby publish for public comments the regulations regarding the procedural requirements for water use licence applications and amendments as set out in the Schedule hereto.

Members of the public are invited to submit written comments on the proposed notice to the Minister of Water and Sanitation within sixty (60) days of publication of this notice in the following manner.

(a) **Post**: Private Bag X313
Pretoria
0001

(b) **Fax**: (012) 323 0321

(c) **E-mail**: skosanam@dws.gov.za

Comments must be marked for the attention of the Chief Director: Water Use Licensing Management: Adv. S Skosana.

The Minister of Water and Sanitation has, under section 26(1)*(k)* of the National Water Act, 1998 (Act No. 36 of 1998), as amended, made the Regulations in the Schedule.

Mr S MCHUNU, MP
MINISTER: WATER AND SANITATION
DATE: 10/03/2023

SCHEDULE

ARRANGEMENTS OF THESE REGULATIONS

ANNEXURES

ANNEXURE A: Timeframes and steps for processing water use licence applications

ANNEXURE B: Timeframes and steps for processing water use licence amendments

ANNEXURE C: Summary of public participation process required for different water use applications

ANNEXURE D: Forms and reports to be completed in respect of particular water use licence application

ANNEXURE E: Application Checklist

ANNEXURE F: Table of contents of technical reports for information requirements to be submitted

WATER USE TECHNICAL REPORTS:

1. Wastewater treatment for water treatment plants
2. Agricultural technical report or business plan
3. Stream flow reduction activity
4. Integrated water and wastewater management plan
5. Geohydrology
6. Wetland delineation
7. Mine closure/ rehabilitation plan
8. Public participation process
9. Civil engineering design
10. Minimum information requirements for water use licence applications for unconventional gas activities

ANNEXURE G: Water use licence application processing fee

ANNEXURE H I: Security and guarantee

ANNEXURE H II: List of water uses for which security is required

ANNEXURE I: Water Use audit report

ANNEXURE J: Amendment request template

CHAPTER 1: DEFINITIONS AND PURPOSE

Definitions

1. In these Regulations, any other word or expression to which a meaning has been assigned in the Act shall have that meaning assigned to it in the Act, unless the context requires otherwise –

(a) ***"applicant"*** means a person or a representative of that person who makes an application for a water use licence or an application for an amendment of a water use licence in terms of the Act.

(b) ***"application for an amendment of a water use licence"*** includes amendment request template in Annexure L, relevant registration form in Annexure D.

(c) **"Black people"** has the meaning assigned to it in the Broad-Based Black Economic Empowerment Act, 2003 (Act 53 of 2003) (as amended).

(d) ***"cumulative impact"*** in relation to a water use, means the impact of a water use that in itself may not be significant, but may become significant when added to an existing and potential impacts eventuating from similar or diverse water use activities or undertakings in the area;

(e) ***"days"*** means working days, subject to regulation 3 of these Regulations.

(f) ***"Environmental Management Plan"*** means a plan contemplated in section 1 of the National Environmental Management Act, 1998 (Act 107 of 1998);

(g) *"**intra-catchment water use licence applications**" means applications for projects that crosses boundaries of one or more catchments*

(h) ***"multiple water use licence application"*** means a water use licence application with more than one water uses that are interlinked, provided the application belongs to one person and the water uses are exercised by that person;

(i) ***"prospecting"*** has the meaning assigned to it in the Mineral and Petroleum Resources Development Act, 2002;

(j) "***receipt***" means a document, marked with a date, issued by the Responsible authority as proof of receipt of an application and of any related document.

(k) ***"responsible authority"*** means the responsible authority contemplated in section 1 of the Act;

(l) ***"sector"*** means water use sector or an economic sector including mining, industry, agriculture, forestry, infrastructure and local government and private developments;

(m) ***"state department"*** means any department or administration in the national or provincial sphere of government.

(n) ***"temporary transfer"*** means a transfer of a water use entitlement in terms of Section 25(1) of the Act limited for an initial period of 1 year with an option of applying for a further period of 1 year (maximum of 2 years);

(o) ***"the Act"*** means the National Water Act, 1998 (Act No. 36 of 1998), as amended;

(p) ***"time frames"*** means the period within which a particular response, decision or other step in the process must be concluded in terms of these Regulations;

(q) ***"water use"*** means water use as contemplated in section 21 of the Act; and

(r) ***"water use licence application"*** includes general information required **in Annexure D, Checklists E** and relevant specialist reports in **Annexure F**.

(s) Additional definitions that are applicable to unconventional gas activities are found in Annexure F (9)

PURPOSE OF THESE REGULATIONS

2. The purpose of these Regulations is to prescribe the procedure and requirements for water use licence applications as contemplated in Sections 41 of the Act, and for an amendment or renewal of water use licence as contemplated in Sections 50 and 52.

CHAPTER 2: TIME FRAMES

Time frames

3. (1) When a period of days must, in terms of these Regulations, be reckoned from or after a particular day, that period must be reckoned as from the start of the day following that particular day to the end of the last day of the period.

(2) For any action contemplated in terms of these Regulations for which a time frame is prescribed, the period of 15 December to 5 January must be excluded in the reckoning of days.

(3) Where a prescribed time frame is affected by the electronic system downtime, the timeframe must be extended by the number of days of the system downtime.

CHAPTER 3: APPLICATION FOR WATER USE LICENCE

Application for water use licence

4. (1) An applicant must make such an application to a responsible authority, as prescribed in these Regulations in accordance with provisions of sections **40** and **41** of the Act.

(2) In the case where an application is made by a representative, such an application must be accompanied by a letter authorising a representative to act on behalf of that person.

(3) A responsible authority must keep a register and copies of all –

(a) Applications for water use licence made in terms of these Regulations;
(b) Rejected applications; and
(c) Decisions made in respect of such applications.

(4) The responsible authority shall use electronic Water Use Licence Application and Authorisation System to keep the records referred to in sub-regulation (3)(a), (b) and (c).

(5) An applicant must have lawful access to a property(ies) in respect to the application.

(6) The water use licence shall lapse if the holder fails to exercise the authorised activities in terms of the licence within three years after the issuance of the licence.

(7) The water use licence during production shall lapse if the holder fails to commence production of a regulated substance in terms of the licence within three years after the issuance of the licence.

Alignment of authorisations of the Department with authorisations of other state Departments

5. (1) Water use licence applications that require authorisation(s) (a) in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA); and (b) in terms of National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) or any specific environmental management act must be submitted and processed in an integrated manner.

(2) Water use licence applications in terms of sub-regulation (1) must be accompanied by proof of application for the relevant authorisation from the relevant authorities.

(3) The responsible authority may determine reports that may be integrated to satisfy the requirements of these Regulations and that of the legislations referred to in sub-regulation (1).

Intra-catchment applications

6. (1) Intra-catchment applications must be submitted to a provincial operations office or Catchment Management Agency (CMA) in which the majority of the water use activities are situated.

(2) The Provincial operations or CMA office where the application is submitted is responsible for assessment of the application and making a recommendation, in consultation with the provincial operations(s) or CMA where the other water uses are situated.

(3) The assessing provincial operations / CMA shall draft separate water use licences for each of the affected water management area.

Pre-application engagement

7. (1) Any person who intends to apply for a water use authorisation must initiate a pre-application engagement with the Department by means of the e-WULAAS.

(2) During the pre-application engagement contemplated in sub regulation (1) the responsible authority must advise the applicant on the need for an authorisation, type of authorisation and procedural requirements and required information for such.

(3) During the pre-application enquiry the Department shall determine the need for a site inspection.

(4) Should the site visit be deemed necessary, such site visit shall take place on the date which shall be within forty (40) days of the pre-application meeting.

(5) The applicant and the Department must agree on the date and time of the site inspection meeting. The date agreed upon may be postponed by mutual agreement between the applicant and the Department provided the postponement will not result in the 40 days provided for in sub-regulation 5 being exceeded.

(6) The site inspection may be attended by relevant Departmental specialist and other relevant stake holders as deemed necessary by the Responsible authority.

(7) The applicant must ensure safety of the Departmental official(s) during site inspection, failure which the Department may stop the meeting and vacate the premises thereof.

(8) Following the site inspection, the responsible authority shall inform the applicant, in writing, of the information required to compile a water use licence application within 10 days of the site inspection.

(9) If a site inspection meeting was deemed not necessary, the Department must write a letter outlining the information requirements within 30 days receipt of the application.

(10) The applicant can submit the application at any time after receipt of the letter of information requirements contemplated in sub-regulations 9 and 10, within a period of two (2) years.

(11) Applicants who fail to submit the application within two (2) years of the letter of information requirements must restart the process of pre-application engagement.

Submission of a water use licence application

8. (1) A water use licence application must be made in accordance with the provisions of sections 40 and 41 of the Act.

(2) All applicants must use the electronic system in sub-regulation 4(4) for the submission of applications, accompanied by an applicable application processing fee contemplated in **Annexure G.**

Multiple water use licence application and dispensing with a requirement for a water use licence

9. (1) If an applicant intends applying for a multiple water use licence within the same catchment area for the same operation, the responsible authority may consolidate the water use applications into one.

(2) The Department may dispense with the requirement in terms of Section 22(3) of the National water act.

(3) Applicant who want their activities to be dispensed with the requirements must make a written request to the responsible authority. Such a request must be accompanied by an authorisation (from an applicable Department) against which the dispensation is requested.

CHAPTER 4: PROCESSING OF AWATER USE LICENCE APPLICATION

Checking completeness of an application prior to acceptance

10. (1) Upon receipt of a water use licence application, the responsible authority must check whether all the required information and documents have been submitted as contemplated in sub-regulation 1(q).

(2) The responsible authority must, in writing, and within 3 days of receipt of a water use licence application

(a) accept the application; or

(b) reject the application.

(3) A rejection letter of an application contemplated in sub-regulation (2)(b) must indicate the information not provided, leading to rejection.

(4) A rejected application is deemed finalised. If the applicant still intends to pursue the activity, a new application must be submitted.

Assessment of a water use licence application and consideration of making of a decision

11. (1) The responsible authority shall, on acceptance of a water use licence application, commence with the assessment of an application.

(2) The responsible authority may request written comments from relevant competent authorities or state departments before making a decision on water use licence ap plications.

(3) The responsible authority may invite the applicant to present his or her specialist reports.

(4) The assessment of a water use licence application and consideration of a decision shall be finalised within the timeframes stipulated in **Annexure A**.

(5) Any supporting documentation, to a water use licence application which contains disclaimers which removes liability and or responsibility from the applicant will not be considered.

CHAPTER 5: CONSIDERATION OF A DECISION FOR WATER USE LICENCE APPLICATIONS TO PROMOTE EQUITY AND REDRESSING PAST RACIAL AND GENDER DISCRIMINATION

This section prescribes requirements and procedures for achieving equity and redressing past racial and gender imbalances as contemplated in section 27(1)(b) and section 45(2)(c) of the Act.

12. (1) The Responsible Authority shall give preference to applications from black people, followed by women.

(2) All applications for consumptive water use (Section 21 a, b and d) submitted to the Department are expected to satisfactorily address Section 27 (1) (b) of the Act. Specifically, the enterprise in respect of the application must allocate shares to black people in the proportions stipulated in Table 1.

Table 1: Requirements for compliance to contribute to transformation for applicants

Section 21 a and b	Section 21 (d)	% Shares allocated to blacks
Up to 250 000 m^3	Up to 100 ha	Exempted
250 000 to 500 000 m^3	100 to 500 ha	25 %
500 000 to 1 000 000 m^3	500 to 1 000 ha	50 %
More than 1 000 000 m^3	More than 1 000 ha	75 %

(5) Applications from mining and related industries (regulated by means of MPRDA), State- and state-owned entities, 100 % black owned are exempted to comply with sub-regulation (4).

(6) The responsible authority may, subject to availability of resources, support black people with water use licence applications in line with section 61 of the Act before a final decision is reached on their applications.

Compulsory Licensing

13 (1) A responsible authority shall issue a notice in a form of a gazette requiring persons to apply for a water use licence within 60 days in terms of section 43 of the Act, for one or more types of water uses contemplated in section 21 of the Act.

(2) An applicant applying for a water use licence in terms of section 43 of the Act, will be charged a fee as contemplated in regulation 17.

CHAPTER 6: APPLICATION FOR EARLIER RENEWAL OR AMENDMENT OF A WATER USE LICENCE

Application for earlier renewal or amendment of a water use licence

14(1) Applications for amendments or earlier renewal for a water use licence shall follow the same procedure outlined in regulation 7 and 8.

(2) Applications for earlier renewal must be initiated at least 250 days before the water use licence reaches its end date.

(3) The timeframes for processing applications for amendment and earlier renewal of water use licence applications is shown Annexure B.

CHAPTER 7: PROCESSING OF AN APPLICATION FOR AMENDMENT OF A WATER USE LICENCE

Checking of completeness of an application prior to acceptance

15 (1) Upon receipt of an application for amendment of a water use licence contemplated in sub regulation 12, the responsible authority must evaluate whether the application is properly completed and accompanied by relevant documents contemplated in sub regulation 12.

(2) The responsible authority must, in writing, and within 5 days of receipt of an application contemplated in sub regulations 14(3) -

(a) accept the application; or

(b) reject the application.

(3) Rejection letter of an application contemplated in sub-regulation (2) (b) must provide adequate reasons for the rejection.

(4) If the application is rejected as contemplated in sub-regulation (2) (b), the responsible authority shall have no obligation to consider that application any further.

Assessment of an application for amendment of a water use licence and consideration of a decision

16(1) The responsible authority shall, on acceptance of the application, commence with the assessment of the application.

(2) The assessment of the application and its consideration for a decision shall be finalised within the timeframes stipulated in **Annexure B**.

CHAPTER 8: APPLICATION PROCESSING FEE, APPEAL ADMINISTRATION FEE, WAIVING OF APPLICATION PROCESSING FEE AND SECURITY BY THE APPLICANT

Application processing fee

17. (1) An applicant applying for a Water Use Licence, or an amendment of a water use licence or a condonation for late application for a compulsory licensing process, with the exception of applications for amendments in terms of section 158 of the Act, must pay a non-refundable application processing fee contemplated in **Annexure G**.

(2) The payment receipt must be part of the application processing fee to be submitted to the Department. The payment can be made in cash in our Regional / Or CMA offices or by making by making an Electronic Funds Transfer (EFT) payment via the online banking platform on details provided in **Annexure G**.

(3) The processing fee in sub-regulation 15(1) will be increased by CPI on 01 April of each year.

Waiving of the application processing fee

18. (1) In terms of Section 40(3) of the Act, the responsible authority may waive the application processing fee on deserving cases.

(2) The application to waive the application processing fee should be submitted to the Department prior to making an application. Waiving of the application processing fee shall only be allowed in exceptional cases.

(3) The decision on the request to waive the application processing fee must be submitted with the application for a water use licence or an application for an amendment.

Security by Applicant

19. (1) Security by the applicant requirements in respect of mining related applications shall follow the National Environmental Management Act (107 of 1998) regulation 667 on financial provision as provided for in the Memorandum of Understanding between the responsible authority and the Department of Environmental, Forestry and Fisheries.

(2) Other applicants who are required, as stipulated in **Annexure, H I** to provide security in respect of a particular water use licence application must complete and submit a form to the responsible authority as contemplated in **Annexure H II**.

(3) The security by the applicant must specify items to be covered under the security and the respective amounts of money applicable to each item.

(4) The security shall be valid for a period of at least 5 years after water use licence activities have lapsed.

CHAPTER 9: TRANSFER OF WATER USE AUTHORISATIONS

Transfer of water use authorisations

20. (1) A person (s) holding an entitlement to use water and wishes to surrender the entitlement or part of it, to facilitate a water use licence application must submit to the Department the following:

i. Proof of water use entitlement to be transferred
ii. Property details and proof of lawful access to the property, if not owning the property(ies)
iii. Certified copy of identity document of the person holding the entitlement
iv. Proof of water use debt clearance
v. Surrender request letter

(2) The temporary transfer of an entitlement for irrigation in terms of Section 25(1) of the Act will be processed and approved by a Water Management Institution.

(3) A temporary transfer contemplated in sub regulation (2) is only limited to an initial period of one (1) year, with an option of applying for further period of one (1) year (i.e. a maximum of two (2) years).

(4) A water use licence application to be facilitated by the surrender of the water use entitlement in terms of Section 25(2) of the Act will be dealt in accordance to Chapter 3 of these Regulations.

CHAPTER 10

PUBLIC PARTICIPATION

Purpose of public participation

21. (1) The public participation process, which the water use licence application is subjected to, aims to give all interested and affected parties an opportunity to submit written objections on the concerned application.

Applicability public participation

22. (1) The categories of applications for which public participation (invitation for objections) must be conducted and the manner in which the public participation must be conducted is shown in **Annexure C**.

(2) Public participation that requires authorisations in terms of NEMA, MPRDA and the Act must be conducted jointly. To this regard the advertisement pertaining to the Act must describe all the water uses to be applied for and indicate that written objections can be submitted to the applicant within a period of 60 days of the advertisement.

Procedure for public participation process

23. (1) Public participation process must be conducted as contemplated in section 41(4) of the Act, as part of the water use licence application process.

(2) Where a public participation process has already been undertaken as contemplated in sub-regulation 20(2) and that public participation process contains and covers all

issues pertaining to water use activities, then that public participation process report must be submitted for the requirements of the water use licence application.

(3) A notice of the application as contemplated in **Annexure C** must be provided to interested and affected parties by:

a) fixing a written notice board at a visible and accessible place to the public at the boundary or on the fence of:

i. the site where the water use activity to which the application relates is or is to be undertaken; or
ii. any alternative site mentioned in the application.

b) giving written notice to:

i. the owner or person in control of that land, if the applicant is not the owner or person in control of that land;
ii. the occupiers of the site where the water use is or is to be undertaken or an alternative site where the water use is to be undertaken;
iii. owners and occupiers of land adjacent to the site where the water use is or is to be undertaken or an alternative site where the water use is to be undertaken;
iv. the municipal councillor of the ward in which the water use is or is to be undertaken or an alternative site where the water use is to be undertaken and any organization of ratepayers that represent the community in the area;
v. any organ of state having jurisdiction in respect of any aspect of the water use activity,
vi. any person who has submitted a valid land claim in respect of the area in which the water use activity will be conducted; or
vii. any other interested and affected party as required by the responsible authority.

c) placing an advertisement in –

i. newspapers, or

ii. any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these regulations.

d) using reasonable alternative methods, as agreed to by the responsible authority, in those instances where a person is desirous of but is unable to participate in the process due to -

i. illiteracy, or
ii. disability.

(1) A notice or advertisement referred to in sub-regulation (3) must –

(a) give adequate details of the application which is subject to public participation; and
(b) state the following –

i. that the application has been submitted to the responsible authority in terms of these Regulations as the case may be;
ii. the nature and locality of the water uses to which the application refers;
iii. the water uses;
iv. where further information on the application or water uses may be obtained;
v. the manner in which and the person to whom representations in respect of the application can be made;
vi. a specified date, not less than 60 days after the last publication of a notice, before which written comments or objection may be lodged; and
vii. an address to which written objections may be lodged.

(2) A notice board referred to in sub-regulation (3)(a) must, -

(a) be of a size at least 60 cm by 42 cm; and
(b) display the required information in a font size of not less than 48.

Applications in properties under land claims

24. (1) Applications in a property(ies) where there is a gazetted land claim must obtain written comments from the land claimants and Land Claims Commissioner. Such written comments must indicate whether they object or not to the granting of the licence.

Register of interested and affected parties

25. An applicant must open and maintain a register which contains the names and contact details and addresses of all persons who objected to the granting of the licence concerned.

Public Participation Report

26. (1) The applicant must compile and submit a public participation report to the responsible authority when submitting a water use licence application. The Public Participation report should contain the following–

(a) written comments or objections of interested and affected parties;
(b) records of meetings; and
(c) register of interested and affected parties.

(3) Where a person desires to make, but unable to make written objections) due to –

(a) illiteracy; or
(b) disability,

reasonable alternative methods of recording comments must be provided for.

CHAPTER 11

GENERAL MATTERS

Offences

27. (1) A person is guilty of an offence, if that person-

(a) wilfully and knowingly provides an incorrect or misleading information in his or her application; or

(b) wilfully and knowingly omits information that may have an influence on the outcome of a decision of a responsible authority.

(c) knowingly engages in fraudulent, corrupt and any other irregular activities included but not limited to offering and acceptance of bribes aimed at influencing the decision on an application.

(2) A person found guilty in terms of these Regulations is liable to the penalties as contemplated in section 69(2) of the Act.

CHAPTER 12

REPEAL, SHORT TITLE AND COMMENCEMENT AND TRANSITIONAL ARRANGEMENTS

Repeal

28. The regulations published under Government Notice No. R.267 of 24 March 2017 are hereby repealed.

Short title and commencement

29. These Regulations are called the Water Use Licence Applications, Amendment, and Appeals Regulations, 2022, and take effect on the date of publication in the Gazette by the Minister.

Transitional arrangement

30. (1) All application submitted prior the promulgation of these Regulations will be dealt in accordance with Regulation 267 or any other manner directed by the Responsible Authority.

ANNEXURE A

Time frames and steps for processing water use licence applications

Number	Step	Number of days
1	Pre-application meeting, site inspection, compilation of technical report, public participation	0
2	Submit application with licence processing fee and technical report (comprising various studies depending on type of use)	1
3	DWS accept or reject the application	3
4	Process application and decision	80
5	Post decision administration and communication to applicant	7
	Total	**90**

ANNEXURE B

Timeframes and steps for processing water use licence amendments

NO	Step	Minor amendment (Section 158 of NWA)	Conditions (formal amendment Section 50 & 51 of the NWA)	Early renewal and amendments (Section 52 of the NWA)	
				Only licence period	Period + new water uses or amendments
0	Pre-application meeting, site inspection, compilation of technical report, public participation	0	0	0	0
1	Applicants submit amendment request, Forms, and/or supporting documents	1	1	1	1
2	Department accept or reject application	3	3	3	3
3	Preliminary Assessment	26	46	56	86
4	**Total**	**30**	**50**	**60**	**90**

ANNEXURE C

Summary of public participation process required for different water use applications

No	Activity	Minimum Media used to call public participation
1	Irrigation: taking water from a water resource to irrigate more than 10 Ha to 25 ha(~100 000 to 250 000 m^3/a)	Letters to surrounding neighbours, Site notice,
2	Irrigation: taking water from a water resource to irrigate more 25 ha (250 000 m^3/a)	Letters to surrounding neighbours, Local newspaper, site notice, Site Meetings
3	Private Housing developments Development	Local newspaper and site notice or notice at a place of interest
4	Category C mines: Alluvial Diamonds, sand, gravel, silicon	Local newspaper and site notice or notice at a place of interest
5	Linear Projects not crossing catchments: Roads, railway line, power lines, sewer pipeline, water pipeline and cables, gas/oil pipeline	Local newspaper and notice(s) at a place(s) of interest
6	Linear Projects crossing catchments: Roads, railway line, power lines, sewer pipeline, water pipeline and cables, gas/oil pipeline	Provincial, and Local newspapers, notice(s) at a place(s) of interest
7	Linear Projects crossing WMAs: Roads, railway line, power lines, sewer pipeline, water pipeline and cables, gas/oil pipeline	National, Provincial, Local newspapers and notice (s) at a place(s) of interest
8	Industries: not producing waste	Local newspaper, site notice or notice at a place of interest
9	Industries: producing waste	Provincial, Local newspapers and site notice or notice at a place of interest

No	Activity	Minimum Media used to call public participation
10	Local Government	Local newspapers and site notice site notice or notice at a place of interest
11	Mining: Category A and B mines: Gold, coal, platinum, chrome	National, Provincial and Local newspapers, notice at a place of interest
12	Unconventional gas: UCG, CBM, SHALE GAS	

ANNEXURE D

Forms and reports to be completed in respect of particular water use licence application

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
1	**DW755**	**Application for water use licence**		• Certified Copy of Identity Document (of the Representative and/or an Applicant), • Certified Copy of Business Registration Certificate (if applicant is a Company) • Certified Copy of Title Deeds Document and/or Permission to Occupy. • Certified Copy of Letter of Authority/Power of Attorney to sign on behalf of the Prospective Water User. • Proof of Payment of Water Licensing Fee, • Certified Copy of BBBEE certificate, Master Layout Plan (optional)
1	**DW756/769**	**An Individual** Allows "Individual" related water users to provide information about their contact details and Water Management Area of where their water use takes place.		
2	**DW757/770**	**A Water Services Provider** Allows "Water Services Provider" related water users to provide information about their		

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		contact details & Water Management Area of where their water use takes place.		
3	**DW758/771**	**A Company, Business or Partnership--National or Provincial Government** Allows "Company, Business or Partnership--National or Provincial Government" related water users to provide information about their contact details & Water Management Area of where their water use takes place.		
4	**DW759/772**	**Water Users Association--Including: Irrigation Boards, Subterranean Water Control Boards, Water Boards for Stock Watering, Settlement Boards, Water Conservation Boards**		

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		Allows "Water Use Association-Including: Irrigation Boards, Subterranean Water Control Boards, Water Boards for Stock Watering, Settlement Boards, Water Conservation Boards" related water users to provide information about their contact details & Water Management Area of where their water use takes place.		
5	**DW760/773**	**Section 21(a) of the National Water Act: Taking water from a water resource** This form allows the applicant to provide information about their water use in respect of; ▪ Pumping of water	Relevant to sector: ▪ Agriculture: Irrigation (form DW787) ▪ Industrial (form DW788) ▪ Mining (form DW788) ▪ Power Generation (form DW788) ▪ Water Supply Service (form DW789)	Submit with supporting appendices: • **Agriculture Business Plan** – if the purpose of **taking of water from a water resource** is for irrigation or animal production • **Waste Water Treatment / Water Treatment Plants Technical Report in Annexure F** – if the purpose of **taking of water from a water resource** is to treat it in a water treatment works • **Integrated Water and Wastewater Management Plan (IWWMP)** – if the purpose of **taking of water from a water resource** is for industry or mining use

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		from a dam or river, or from a borehole.	If "Pump" is selected as a method of abstraction – ▪ complete Form DW784)	
6	**DW762/774**	**Section 21(b) of the National Water Act: Storing water** This form allows the applicant to provide information about their water use in respect of ▪ Water that is stored in a dam, reservoir or other impoundment. The storage dam can be in a watercourse, or off channel. Commonly the stored water is from natural runoff or river water. ▪ Weirs built on rivers may also store water, unless there is an outlet for drainage under low flow	Complete the following if the purpose of the dam is for: ▪ Agriculture: Irrigation (complete form DW787 ▪ Mining (form DW788) ▪ Water Supply Service (form DW789) Complete form DW790 in the following two cases: ▪ A proposed dam which has not yet been classified, or ▪ An existing dam which will be enlarged by increasing the gross storage capacity, dam classification must take place before the licence application. In these cases, complete only parts 1, 2, 3, and 4 of	Submit with supporting appendices: • Water storage facility design report (Dam/ Pollution control dam /Return water dam) together with; • **Agriculture Business Plan** – if the purpose of storing water is for irrigation or animal production • **Waste Water Treatment / Water Treatment Plants Technical Report in Annexure F** – if the purpose of storing water is to treat for potable consumption in a water treatment works • **Integrated Water and Wastewater Management Plan (IWWMP)** – if the purpose of storing water is for industry or mining use; • **Power generation business plan** - if the purpose of storing water is for power generation;

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		conditions. ▪ These structures must comply with the Dam Safety Regulations.	this form, and ▪ Complete form DW793 (Dam Classification).	
7	**DW763/775**	**Section 21(c) of the National Water Act: Impeding or diverting the flow of water in a watercourse** This form allows the applicant to provide information about their water use in respect of ▪ Impeding or diverting flow does not cause any loss in flow. ▪ Impeding or diverting structures can fully or partially extend into a river, forcing the natural flow direction to be re-directed around the structure. ▪ Impeding or diverting	Also complete DW781/775: Supplementary Water Use Information Form for Section 21(c) and (i) Water Uses.	Submit the following "technical reports" with supporting appendices: • Wetland delineation report

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		can be temporary, during construction of a road bridge for example. It can also be permanent, such as the building of a low water bridge across a river where the flow is permanently impeded as it moves under the bridge. • Gauging weirs are an example of impedance if under low flow conditions there is no storage behind the weir. If there is water retained in the weir, then the water use is considered to be "storing water" and "impeding or diverting flow".		
8	**DW764/776**	**Section 21(d) of the**		Submit the following "technical reports" with supporting appendices:

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		National Water Act: Engaging in a stream flow reduction activity This form allows the applicant to provide information about their water use in respect of • Commercial afforestation as is currently the only activity declared to be a stream flow reduction activity.		**Stream flow reduction activity business plan**
9	**DW768/781**	**Section 21(i) of the National Water Act: Altering the bed, banks or characteristics of a watercourse** This form allows the applicant to provide information about their water use in respect of	Also complete DW781/775: Supplementary Water Use Information Form for Section 21(c) and (i) Water Uses	Submit the following "technical reports" with supporting appendices: • Wetland delineation report

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		▪ Physical changes that are made to a water course, for example to widen or straighten the channel of a river. ▪ Alteration of the bed and banks is usually needed for construction and infrastructure development near or across a river. Sand mining is another common example of this water use. ▪ Alteration of the course of a watercourse refers to the diversion of the water course. The river channel is usually reconstructed or replaced with a canal which may extend for several kilometres from the original course.		

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
10	**DW805/782**	**Section 21(j) of the National Water Act: Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people** This form allows the applicant to provide information about their water use in respect of when water must be removed for efficiency or safety reasons. An example of this use is to ensure safety in underground mining. Many construction sites also require underground water to be removed. This water use does NOT apply to the taking of water referred to in 21(a)		Submit the following "technical reports" with supporting appendices if the purpose of **Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people** is for: • **Civil Design Report** – Water storage facility design report (Dam/ Pollution control dam /Return water dam) together with; • **Waste Water Treatment / Water Treatment Plants Technical Report in Annexure F** – if the purpose of storing water is to treat for potable consumption in a water treatment works • **Integrated Water and Wastewater Management Plan (IWWMP)** – if the purpose of storing water is for industry or mining use; • **Power generation business plan** - if the purpose of storing water is for power generation

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		above.		
11	**DW806/783**	**Section 21(k) of the National Water Act: Using water for recreational purposes** This form allows the applicant to provide information about their water use in respect of organised water sports, fishing competitions, floating restaurants etc.		
12	DW765	**Section 21(e) of the National Water Act**: Engaging in a controlled activity in terms of section 37 or 38 of the NWA Irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork		Submit the following "technical reports" with supporting appendices if the purpose of**Engaging in a controlled activity in terms of section 37 or 38 of the NWA**is for: • **Waste Water Treatment / Water Treatment Plants Technical Report in Annexure F** – if the purpose is irrigation of any land with waste or water containing waste generated through any industrial activity is for wastewater treatment works • **Integrated Water and Wastewater Management Plan (IWWMP)** – if the purpose of Irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork is

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		Currently, the following are controlled activities: ▪ irrigating with waste water; ▪ modification of atmospheric precipitation (cloud seeding); ▪ power generation which alters the flow regime of a water resource; and intentional recharge of underground water with waste water. ▪ A common controlled activity is irrigation with wastewater, typically from a water treatment works. This can be a productive use of water if a crop is grown with the wastewater ▪ Hydrological fracturing,		for industry or mining use; • **Power generation business plan** - if the purpose of Irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork is for power generation; • **Geohydrological report** – if the controlled activity is intentional recharging of an aquifer with any waste or water containing waste

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		unconventional gas		
13	DW766	**Section 21(f) of the National Water Act**: Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit This water use entails the discharge of waste or wastewater directly into a water resource. ▪ Common examples of this water use are waste released into a river or dam at a discharge point such as waste water from factories, or partially treated wastewater from treatment plants. ▪ Waste discharged into a municipal		Submit the following "technical reports" with supporting appendices if the purpose of**Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduitis** for: • **Civil Design Report –** Water storage facility design report (Dam/ Pollution control dam /Return water dam) together with; • **Waste Water Treatment / Water Treatment Plants Technical Report in Annexure F –** if the purpose is for **discharging waste or water after** treatment in a water works • **Integrated Water and Wastewater Management Plan (IWWMP) –** if the purpose is for **discharging waste or water after** treatment in a water worksfrom industry or mining use; • **Power generation business plan -** if the purpose is for **discharging waste or water after** treatment in a water works**power generation;** • **Geohydrological report** – if the purpose is for **discharging waste or water after** treatment in a water works **affects groundwater.**

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		sewer is NOT included in this water use; however, the waste discharged by the municipal treatment works into a water resource IS an example of this water use.		
14	DW767	**Section 21(g) of the National Water Act**: Disposing of waste in a manner which may detrimentally impact on a water resource ▪ This is typically disposal that takes place into on-site facilities such as french drains, conservancy tanks, pit latrines and soak-aways. Another		Submit the following "technical reports" with supporting appendices if the purpose of**Disposing of waste in a manner which may detrimentally impact on a water resource** is for: • **Civil Design Report** – Water storage facility design report (Dam/ Pollution control dam /Return water dam) together with; • **Waste Water Treatment / Water Treatment Plants Technical Report in Annexure F –** if the purpose is for **disposing is** treatment in a water works • **Integrated Water and Wastewater Management Plan (IWWMP) – – if the purpose is for disposing waste or water after** treatment in a water works **from industry or mining use;**

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		example of this water use is disposal into wastewater treatment systems, such as oxidation ponds that do not have an outlet into a water resource. If the oxidation pond has an outflow into a river or dam, it is defined as water use 21(f) above for discharging waste water into a water resource. Evaporation dams are a further common example of this water use.		• **Power generation business plan -** if the purpose is for **disposing waste or water after** treatment in a water works**power generation;** • **Geohydrological report** – if the purpose is for **discharging waste or water after** treatment in a water works **affects groundwater.**
15	DW780	**Section 21(h) of the National Water Act**: Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process		Submit the following "technical reports" with supporting appendices if the purpose ofDisposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process is for • **Power generation business plan -** if the purpose is for;

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		▪ This water use refers specifically to the temperature of the wastewater which may have a significant effect on the environment. This water use also refers to discharges to the marine environment (sea, surf-zone).		
16	DW901	Details of Property where water use occurs		
17	DW902	Details of Property Owner		
18	DW775	Supplementary Water Use Information Form for Section 21(c) and (i) Water Uses.		
19	DW784	Taking water from a water resource - Pump technical data		
20	DW786	Taking water from a water resource - Canal technical data		
21	DW787	Taking water from a water resource - Irrigation		

No.	Form Name	Complete this form if you are applying as and for;	Supplementary forms (submit with application)	Supporting technical information to be provided with the technical report
		field and crop information		
22	DW788	Taking water from a water resource - Power generation, industrial or mining use.		
23	DW789I	Taking water from a water resource - Domestic, Urban, Commercial or Industrial use.		
24	DW790	Storing water- Dam and basin technical data		
25	DW793	Storing water- Dam Classification		

Annexure E

Application Checklists

Applicant Information			
Name of Applicant	Date	Case Officer	
Contact Details of Applicant or Representative			
Last Name	First Name	Email	
Postal Address	City	Phone No.	Mobile No.
Property Details			
Sub Catchment	Quaternary Catchment	Reference Number	
Property Name	Number	Portion	Administrative District
Project Description			

Page 1

Applicable Water Uses			
S 21	Description	Applicable	
		Yes	No
(a)	Taking water from a water resource		
(b)	Storing water		
(c)	Impeding or diverting the flow of water in a watercourse		
(d)	Engaging in a stream flow reduction activity		
(e)	Engaging in a controlled activity		
(f)	Discharging waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit		
(g)	Disposing of waste in a manner which may detrimentally impact on a water resource		
(h)	Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process		
(i)	Altering the bed, banks, course or characteristics of a watercourse		
(j)	Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people		
(k)	Using water for recreational purposes		

*Please tick the water uses relevant to this application

General Required Information			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
Proof of Payment of Licence Application Processing Fee *(Compulsory)*				
Copy of Identity Document of Applicant or Delegated Person *(Compulsory)*				
Copy of Company Registration Certificate *(Compulsory)*				
Copy of Trust Registration Certificate *(Compulsory)*				
Letter of Authorisation for Companies, Trusts or Legal Entities *(Compulsory)*				
Letter of Authority or Power of Attorney to Apply on behalf of Applicant				
Copy of BBBEE Certificate				
Letter of Consent if the Applicant is not the Property Owner *(Compulsory)*				
*Applicant Information Form: Individual (DW 756 / 769)				
*Applicant Information Form: Water Service Provider (DW 757 / 770)				
*Applicant Information Form: Company, Partnership, Government (DW 758 / 771)				
*Applicant Information Form: Water User Association (DW 759 / 772)				
*Property Details Form (DW 901)				
Property Owner Details (DW 902)				
Permission to Occupy (PTO) , Title Deed, Lease Agreement, Community Resolution				
A description of the location of the activity, including (aa) the 21 digit Surveyor General code of each cadastral land parcel, (bb) where available, the physical address or farm name, (cc) the coordinates of the boundary of the property or properties,				
When providing coordinates, such coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94 WGS84 co-ordinate system.				
a plan which locates the proposed activity or activities applied for at an appropriate scale, or if it is- (aa) a linear activity, a description and coordinates of the corridor in				

General Required Information			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
which the proposed activity or activities is proposed; or (bb) on land where the property has not been defined, the coordinates of the area within which the activity is proposed				
Where applicable, proof of acceptance of an application for any right or permit in terms of the Mineral and Petroleum Resources Development Act, 2002 or environmental authorisation as per regulation 7 must be provided				
Section 27 Motivation				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Section 21 (a): Taking water from a water resource			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
*Taking water from a water resource Form (DW 773)				
*Pump Technical Data Form (DW 784)				
*Canal Technical Data Form (DW 786)				
*Irrigation Field and Crop Details (DW 787)				
*Supplementary Info: Power Generation, Industrial or Mining (DW 788)				
*Supplementary Info: Domestic, Urban, Commercial or Industrial (DW 789)				
Soil Suitability Report (for irrigation from Dept. Agriculture)				
Viability Confirmation (for permanent transfers from Dept. Agriculture)				
Confirmation of no Land Claims (for permanent transfers from Rural Development and Land Reform)				
Recommendation from CCAW (for reserved water)				
Recommendation from WUA or IB (for scheme related water use)				
Stakeholder Consultation with Interested and Affected Parties				
Pump Test Certificate (Groundwater)				
Geo-hydrological Study (Groundwater)				
Technical Design Report in support of the water use applied for				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Section 21 (b): Storing water			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
*Storing water form (DW 774)				
*Dam and Basin Technical Data Form (DW 789)				
*Dam Classification Form (DW 793) (for dams > 5m and > 50 000m^3)				
Technical Design Report in support of the water use applied for (Hydrological study)				
Dam Design Drawings or As Build Drawings in case the Dam is already constructed				
Dam Capacity Curve				
Dam Location Map				
Master Layout Plan (1:100 year flood line and delineation)				
Regional Maximum Flood (RMF) and Spillway Capacity Calculations				
EIA and EMP				
Environmental Authorisation				
Stakeholder Consultation with Interested and Affected Parties				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

CONTINUES ON PAGE 130 OF BOOK 2

Printed by and obtainable from the Government Printer, Bosman Street, Private Bag X85, Pretoria, 0001
Contact Centre Tel: 012-748 6200. eMail: info.egazette@gpw.gov.za
Publications: Tel: (012) 748 6053, 748 6061, 748 6065

Government Gazette
Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID AFRIKA

Vol. 695 19 May Mei 2023 No. 48630

PART 2 OF 3

ISSN 1682-5845

9 771682 584003 48630

Section 21 (c) & (i): Impeding & Altering			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
* Impeding or diverting the flow of water in a watercourse form (DW 763)				
* Altering the bed, banks, course or characteristics of a watercourse (DW 789)				
*Supplementary Information for 21 (c) & (i) form (DW 775)				
Relevant Environmental Impact Assessment Studies				
Wetland Delineation Study				
Method Statement				
Environmental Management Plan				
Storm Water Management Plan				
Hydrological Studies				
Design Drawings or As Build Drawing if the structure is already been built				
Rehabilitation Plan				
Master Layout Plan (Must include all infrastructure, water courses, scientific determined buffers, flood lines, riparian habitat, and ecologically valued features; on A1 paper				
Landscape Maintenance Plan				
Pollution Plume Map / Drawings				
Cone of Depression Drawings				
Plant Species Plan (A1 paper)				
Monitoring Programme and Auditing Plan				
Alternatives that will address the hierarchy of impacts, starting with the exclusion of watercourses				
Stakeholder Consultation with Interested and Affected Parties				

Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Section 21 (e): Engaging in a controlled activity			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
* Engaging in a controlled activity form (DW 765)				
*Monitored Waste Discharge Details form (DW 904)				
*Irrigation Field and Crop Details (DW 787)				
Geohydrological Study				
Water Quality Report				
Soil Analysis				
Stakeholder Consultation with Interested and Affected Parties				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Section 21 (f): Discharging waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
* Discharging waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit form (DW 766)				
*Monitored Waste Discharge Details form (DW 903)				
Water Quality Report				
Integrated Waste Water Management Plan (IWWMP)				
Stakeholder Consultation with Interested and Affected Parties				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Section 21 (g): Disposing of waste in a manner which may detrimentally impact on a water resource			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
* Disposing of waste in a manner which may detrimentally impact on a water resource form (DW 767)				
*Monitored Waste Discharge Details form (DW 904)				
*Details of Waste Management Facility form (DW905)				
Water Balance				
Design Drawings of Waste Management Facility and Report				
Geohydrological Report				
Integrated Waste Water Management Plan (IWWMP)				
GN 704 Motivation				
Stakeholder Consultation with Interested and Affected Parties				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Section 21 (h): Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
* Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process form (DW 780)				
*Monitored Waste Discharge Details form (DW 903)				
Water Balance				
Water Quality Report				
Integrated Waste Water Management Plan (IWWMP)				
Stakeholder Consultation with Interested and Affected Parties				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Section 21 (j): Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
* Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people form (DW 780)				
Water Balance				
Geohydrological Report				
Stakeholder Consultation with Interested and Affected Parties				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Section 21 (k): Using water for recreational purposes			Official Use	
Description	Applicable		Submitted	
	Yes	No	Yes	No
* Using water for recreational purposes form (DW 780)				
Public Private Partnership (PPP) Approval				
Approval as per section 116 of the National Water Act, 1998 (Act 36 of 1998)				
Stakeholder Consultation with Interested and Affected Parties				
Other information as requested in the acknowledgement of receipt and where applicable the site visit and meeting:				

Site Inspection Information	
Date of Site Inspection	

Parties Present at the Site Inspection			
Name and Surname	Designation	Contact Number	Signature

Site Inspection Report

OFFICIAL USE:

Technical report submitted : Complete ☐

Incomplete ☐

Signature of Assessor

Date (dd/mm/ccyy)

ANNEXURE F

Table of contents of technical reports for information requirements to be submitted

Number	Report designation	Purpose of report
1	Technical report for water treatment and wastewater treatment plants	Water uses for water treatment and wastewater treatment plants
2	Agriculture business plan	Agricultural water use
3	Stream Flow Reduction Activity Business plan	Stream Flow Reduction Activity
4	Integrated water and wastewater management plan	Water uses for mining and industrial operations
5	Geohydrological Report	specialist study to all groundwater
6	Wetland delineation report	Stand-alone report for wetlands and watercourses
7	Mine closure and rehabilitation plan	Plan for the closure of a mine and rehabilitation
8	Public participation report	Consultation of interested and affected parties
9	Civil Design	Minimum information requirements
10	Unconventional gas activities	Minimum information requirement

The Tables of Contents

1. WASTEWATER TREATMENT / WATER TREATMENT PLANTS TECHNICAL REPORT

A. THE EXECUTIVE SUMMARY

The executive summary should summarise the overall benefits of the water supply and or wastewater management project to the beneficiary communities. In regard to a wastewater management project it should highlight the major environmental findings and how these will be managed to prevent, reduce or rehabilitate adverse impacts.

B. TABLE OF CONTENTS OF THE TECHNICAL REPORT

Application for a licence to take water from a water resource for domestic and industrial supply, and to dispose off waste from a waste treatment works by, e.g., discharge, irrigation etc.

WASTEWATER TREATMENT WORKS AND WATER TREATMENT WORKS (POTABLE USE)

Part1: Administrative Information and Brief Project Description

(NB: use maps to indicate the information where necessary.)

1.1 Name, address, telephone and fax numbers and contact persons for:

- *Water Services Authority /Water Services Provider/*
- *The holding company/authority/*
- *The applicant (name and status))*

1.2 Details of existing exemptions - if applicable.

(In terms of sections of the National Environmental Management Act. If exempted, attach copy of letter to the report)

1.3 Details of the contract between the water services authority and the water services provider. (Attach a copy of the contract to this report)

1.4 Magisterial district and relevant regional services authority

1.5 Name of the nearest town/residential area and its distance from the site

1.6 Surface infrastructure serving the site (e.g. roads, railways, power lines, etc.)

1.7 Ownership of the land

1.8 Longitude and Latitude of the site

1.9 Zoning of the land

1.10 Ownership of adjacent/potentially impacted land

1.11 Occupier of the adjacent land

1.12 Zoning of the adjacent land

1.13 Name of the river catchment

1.14 Brief description of the intention of this application

1.15 Has the Water Treatment Plant and/or Sewage Treatment Works been included in the Water Services Development Plan (WSDP)

WSDP Registry File Number as given by the Department

WASTEWATER TREATMENT WORKS

Part2: Description of the Environment (for orientation and first order screening)

2.1 Climate

2.1.1 Regional climate
2.1.2 Rainfall data
2.1.3 Temperature data
2.1.4 Wind data
2.1.5 Evaporation data
2.1.6 Any extreme weather conditions prevalent (e.g. snow, frost, hails, etc.)

2.2 Topography

2.3 Soil

2.4 Geology – General geology of the area–presence of dykes, sill sand faults

2.5 Land capacity (arable, grazing, wetland or wilderness)

2.6 Land use–zoning

2.7 Natural vegetation and plant life

2.8 Surface water

- name of nearest watercourse
- water quality - pH, conductivity etc.
- surface water use (domestic, industrial, agricultural, recreational or natural environment)
- water authority
- presence of wetlands

2.9 Groundwater

- presence and position on a map, of boreholes within a1000 m radius of the site
- yield of boreholes
- ground water use
- ground water quality (pH, conductivity, nitrate)

2.10 Air quality
2.11 Noise
2.12 Sites of archaeological interest
2.13 Sensitive landscapes
2.14 Visual aspects
2.15 Regional socio-economic structure (Short description)

Population, economic activities, unemployment rate, housing demand, social infrastructure, water supply and sanitation, power supply.

2.16 Interested and affected parties
2.17 Industrial activity (types of industries present, waste purification, - by industry/ third party, by local authority)

Part 3: Water supply

3.1 Water use

3.1.1 Sources of water

(local authority, river, boreholes, sea, irrigation board or water board, use of excess ground water, recycled waste(internal source, eg. Cooling water), recycled waste (external source, e.g. sewage waste)

(In all above cases the average daily/monthly and maximum daily/monthly quantities are required)

3.1.2 Yearly usage patterns (e.g., more in summer than winter)
3.1.3 Yearly water use
3.1.4 Water rights (Legal documents)

(riparian rights, public or private water, entitlements, water court orders, quotas, agreements)

Part4: Description of Reticulation system

4.1 Percentage of area served which is un-sewered.

4.1.1 How is this area serviced:

(pit latrines bucket system, conservancy tanks, septic tank sand French drains)

4.2 Percentage of the area which is sewered or to be sewered

4.2.1 What type of network is in place/will be installed

- *(standard reticulation, small bore system)*

4.2.2 Location of sewers

- midblock
- standard

4.3 Nature of sewage

4.3.1Domestic component –projections (no. of persons)

Population	Year x	Year x+5	Year x+10	Year x+15	Year x+20
High Income Permanent					
Low Income Permanent					
Holiday Makers					

4.3.2 Industrial component

- daily volumes/expected volume treated
- type of industrial waste (mainly organic, organic, heavy metals, mixture)
- names of industries contributing to the volume (and locally treated) including problem constituents received from each

4.4 Hydraulic and organic loading

4.4.1 Hydraulic loading
(High-income, low income, holiday makers, industrial component)
4.4.2CODload (g/day)
4.4.3 Total Nitrogen as TKN (g/day)
4.4.4 Phosphate as P (g/day)
4.4.5 Peak dry weather flow factor – Xx Normal DWF
4.4.6 Peak wet weather flow factor– Xx Peak DWF

Part 5: Description of Sewage Treatment works and Classification

5.1 Inlet works (screens, grit channels and flow measurement)

5.1.1 Method of disposal of screenings and grit, (e.g. by burial, incineration, etc.)
5.1.2 Location of the disposal site and/or the name of the solid waste dump
5.1.3 Method of flow measurement

5.2 Primary sedimentation tanks:

5.2.1 What is the nominal upward flow rates for:

- average dry weather (m^3/hr)
- peak storm flow(m^3/hr)

5.3 Septic tanks

(number of septic tanks and volume of each, average retention time in the tank(s)at average dry weather flow(hours),average depth of tank(s)(m), (proposed) methods of periodical desludging, methods of disposal of the sludge so removed, method of disposal of the overflow, if not to further processing, e.g. to French drains, soak-away, etc.).

5.4 Biological filtration systems

(Cubic metre of settled sewage per cubic metre of media per day (m^3/day), number of gramsof"4 hour PV" per cubic metre of media per day (g/m^3/day))

5.5 Activated sludge systems–where applicable, give proprietary names: State the:

5.5.1 Type of system and basic design information;
5.5.2 Method of operation; and
5.5.3 Method of phosphate removal, if any.

5.6 Humus tanks or secondary sedimentation tanks:

5.6.1 What is the nominal upward flow rate for:

- average dry weather flow (m^3/hr)
- peak storm flow (m^3/hr)

5.7 Sludge handling:

5.7.1 State the quantity of wet sludge (to be produced per day) (m^3)
5.7.2 State the method of treatment of surplus activated sludge discharged, prior to its disposal on land or to drying beds or by other means

5.7.3 State the relative digester capacity (m^3/capita)
5.7.4 State the total digester capacity (m^3)
5.7.5 How is the supernatant liquid (to be) disposed of
5.7.6 If land disposal of wet sludge is (to be) used, state the area of land (ha)
5.7.7 State the relative capacity (m^3/capita) of any sludge drying beds
5.7.8 State the total area (m^2) of any sludge drying beds
5.7.9 How is drainage from the beds or other separators (to be) dealt with?
5.7.10 What other means are (to be) used for dealing with digested or any other sludge?
5.7.11 How is dried sludge (to be) finally disposed of, e.g. on land, by incineration, etc.?

5.8 Oxidation Pond systems:

5.8.1 Describe any pre-treatment units ahead of the ponds and state their capacity
5.8.2 State the number of ponds in the system, their depth and surface area for each
5.8.3 Give the sequence of flow through the pond system
5.8.4 What is the:
- average dry weather flow (m^3/hr)
- peak storm flow (m^3/hr) of the pond system, if any?

5.8.5 Where is the outflow (to be) directed to, e.g. evaporation ponds, irrigation, etc.

5.9 Tertiary treatment –state basic design details, where applicable for:

5.9.1 Micromesh screens
5.9.2 Rapid gravity sand filters
5.9.3 Slows and filters
5.9.4 Hamlin filters
5.9.5 Reed bed systems
5.9.6 Maturation Pond system, (*i.e. the number of ponds, the sequence in which they are used (e.g. in series), the retention time in each pond (days) and the total capacity of the ponds (m^3))*
5.9.7 Phosphate removal – give details of the method and of the basic design

5.9.8 Disinfection of the final effluent – *(if by chlorination, give details of the method and the contact time in the pond or contact tank; if by any other method, UV light, ozone, etc., give details of use, including the period of application and the intensity)*
5.9.9 Any other tertiary treatment
5.10 Classification of works and operators

5.10.1 Is the works classified?
5.10.2 Are all operators classified?
(-request relevant forms for classification of both the works and the operators in terms of the present Regulation No. R2834 from (012)336 7547)

5.11 Fencing around the works– describe.

Part 6: Water and Materials Balance Diagram

(Supply a flow diagram showing all inputs and outputs (including materials, chemicals, wastes, sludge's, solid waste etc.)

Part 7: Management Systems and Pollution Prevention Methods

7.1 Description of hierarchy of operating staff
7.2 Availability of mechanical maintenance staff
7.3 Availability of electrical maintenance staff
7.4 Availability of process control staff and/or process consultants
7.5 Are there a set of drainage by-laws in place (if so, attach a copy)
- are there by-laws actively administered

7.6 Technology – *(This must be answered considering the description of the environment and the environmental impacts)*

7.6.1 Is the waste treatment process the best option to protect the described environment - motivate
7.6.2 Is the disposal practice the best option – motivate
7.6.3 Is the best available technology in use (best environmental option) - motivate
7.6.4 What is the alternative option of treatment and disposal?
7.6.5 Why was the proposed/existing option chosen?

7.7 WQ Operational Management Plan

7.7.1 What are the chances of a system failure?
7.7.2 What are the implications of such failure?
7.7.3 What safety factors have been used?
7.7.4 What is the management and maintenance plans?
7.7.5 Availability of standby/spare equipment?
7.7.6 What is the accident and emergency action plans?

7.7.7 What plans are there to minimise the pollution hazard/ potential?
7.7.8 What monitoring and auditing systems do you have to detect malfunctions?
7.7.9 Are their alarm systems in place at all pump stations?
7.7.10 Are their notification procedures for the downstream users?

PART 8: DISPOSAL OF SOLID WASTE AND SLUDGE

8.1 Description of solid waste

8.1.1 Solid waste
- quantity (tons per day, tons per year)

8.1.2 Analyses of solid waste (composition and percentages)

8.2 Description of sludge
- quantity (tons per day, tons per year)

8.2.1 Analyses of sludge
8.2.2 Classification of sludge according to the Guidelines: *Permissible Utilisation and Disposal of Sewage Sludge, Edition 1 August 1997.*
8.2.3 Disposal to ponds/ lagoons Groundwater monitoring
8.2.4 Land disposal
- (Irrigation, Composting, Analyses of soils, Onsite/Off site, Description of groundwater monitoring)

8.2.5 Description of contracts for removal of sludge

PART 9: FINAL WASTE DISPOSAL EVALUATION

There are various options which can be taken when disposing of waste. It can be disposed of to:

- land, ponds/dams and or irrigation, groundwater, recharging of aquifers, surface water, estuaries or lagoons, sea, surf zone, deep sea pipeline, air – evaporation, municipal works or private contractor, contained areas, mined out areas(underground)

- The waste disposal practice needs to be fully evaluated taking into account various norms and standards. It is imperative that the practice is shown to have a minimal environmental impact and that the practice has the minimum effect on the health and interest of other water users in the environment.)

9.1 Quantity

- (number of days discharged, average m^3per day/maximum and peak, average m^3per year/maximum and peak)

9.2 Land disposal–ponds or dams

9.2.1 Waste quality analyses

(pH/ conductivity/ suspended solids (SS)/ COD/ NH/ NO/ Ortho phosphate (asP) /Faecal coli)

9.2.2 What is the waste quantity
- daily volumes
- monthly volumes for each month

9.2.3 What is the geology under-lying the dams
9.2.4 What is the depth of the water table?
9.2.5 What is the slope of the site
9.2.6 What is the average monthly evaporation and rainfall
- monthly totals

9.2.7 Calculate the positive/negative monthly evaporation rate using all the above information
9.2.8 Calculate the size of the ponds required. Take into account the waste that was stored during months of negative evaporation rates.
9.2.9 What is the situation of the dams with regard to?
(Rivers/ boreholes/ use/ yield/ quality/ springs/fountains/ natural depressions/ urban areas/ dwellings)
9.2.10 Is the dam site protected from ingress of storm water
9.2.11 What is the use of ground water in the vicinity (Domestic/ agricultural/ industrial/ recreational/ environmental)
9.2.12 Have the dams been sealed with
- plastic liners
- bentonite or other clay

9.2.13 Are there seepage collection drains and returns pumps
9.2.14 Describe the leakage detection and monitoring systems in place

9.3 Land disposal - Irrigation areas

9.3.1 Waste quality analyses

(pH/ conductivity/ suspended solids (SS)/ COD/ NH/ NO/ Ortho phosphate(asP) /Feacalcoli)

9.3.2 What is the waste quantity?

- daily volumes
- monthly total for each month

9.3.3 What is the average monthly evaporation and rainfall?
9.3.4 What is the crop to be irrigated
9.3.5 What is the crop factor
9.3.6 What type of irrigation method issued (flood or overhead?)

- how many overhead sprayers are in place?
- how many days are in an irrigation cycle (attach an irrigation design layout and management plan)

9.3.7 What is the irrigation/application efficiency?
9.3.8 Determine the monthly crop irrigation requirements.
9.3.9 What is the permeability and infiltration rate of the soil profile
9.3.10 What is the slope of the irrigation area
9.3.11 What is the root depth of the soil
9.3.12 What is the underlying geology
9.3.13 Calculate the size of the irrigation area required. Take into account the irrigation of waste that was stored during months of negative evaporation rates.
9.3.14 What is the depth of the water table (*Summer/ winter)*
9.3.15 Quality of the ground water (macro analyses - major anions and cations)
9.3.16 Slope of the irrigation area
9.3.17 Direction of groundwater flow
9.3.18 Situation of the area with regard to:
(Rivers/ boreholes/ use/ yield/ quality/ springs/fountains/ natural depressions/ urban areas/ dwellings)
9.3.19 What is groundwater in the vicinity used for?
(Domestic/ agricultural/ industrial/ recreational/ environmental)
9.3.20 Are there environmental protection methods in place such as:

- storm water cut-off trenches above the site
- cut-off canals below the site

9.3.21 What soil amendments are done per season to sustain soil fertility and permeability
9.3.22 Soil evaluation (analyses)

9.4 Disposal to groundwater

9.4.1 Waste volume
9.4.2 Waste quality analyses
(pH/ conductivity/ suspended solids(SS)/ COD/ NH/ NO/ Ortho phosphate(asP) /Feacal coli)
9.4.3 Depth of groundwater
9.4.4 Yield of groundwater (1000 m radius of disposal area)
9.4.5 Quality of groundwater (macro analyses - major anions and cations)
9.4.6 Potential use of groundwater (Domestic /agricultural/ stock watering/ irrigation/ industrial)
9.4.7 Critical quality component

9.5 Disposal to surface water

9.5.1 Quantity of waste
9.5.2 Annual discharge pattern
9.5.3 Name of minor river catchment
- area of catchment, mean monthly run-off, quality of river upstream of discharge

9.5.4 Waste quality analyses (pH/ conductivity/ suspended solids (SS)/ COD/ NH/ NO/ Ortho phosphate(asP) /Feacal coli)
9.5.5 Established use of river (domestic/ agricultural/ industrial/ recreational/ environmental)
9.5.6 Establish the applicable WQ Criteria
9.5.7 Establish the critical components
9.5.8 Name of major river catchment (*Collect same information as for minor catchment)
9.5.9 Quality of minor catchment before discharge into major catchment (analyses)
95.10 Quality of major catchment river upstream of Minor River (analyses)
9.5.11 Quality of major catchment river downstream of confluence of Minor River
9.5.12 Mean monthly run-off of major catchment upstream of Minor River
9.5.13 Describe the RWQO's for the total catchment
9.5.14 Calculate Waste Load Allocations (WLA's)and the effect which the discharge will have on the REQO (Receiving Environmental Quality Objectives)

9.6 Discharge to lagoon and estuary –This discharge could have an impact similar to surface or sea discharge. The questions related to surface discharge will be applicable.
9.7 Disposal by Evaporation: (Evaporation occurs within a process of because of excess heat, or in cooling towers or in specially designed dams where it is promoted. If evaporation is promoted by means of an evaporation pond system, then the points that have to be addressed are the same as mentioned under section 9.2)
9.8 Municipal or private waste purification plants other than works being evaluated)

9.8.1 Name of the plant
9.8.2 Name of the owner
9.8.3 Address, telephone, and fax no. and name of contact person
9.8.4 Registration number of works (if applicable
9.8.5 Letters of acceptance of the waste by the owner of the works (attach a copy of the agreement for the delivery and acceptance of the waste)
9.8.6 Purification plant compliance record
9.8.7 Are there any quality acceptance limits in operation, e.g. Drainage by-laws
9.8.8 Are there any critical components in the raw waste (identify)
9.8.9 Effect of acceptance of the raw waste on the compliance record of the purification plant (Indicate on a plan-ona1:50000–map)

Sewage treatment works

- municipal (local authority)
- other
- describe

Re-use

- agriculture/ industrial/ municipal/ other

Land

- dams/ponds/evaporation
- irrigation only
- dams/ponds/irrigation

Storm water drains

- name of nearest water course

Watercourse/river

- name
- name of greater catchment river

Estuary

- name of estuary Sea
- name of nearest town or beach

Disposal to solid waste disposal site

- name

Groundwater (recharge)

- name of nearest user
- name of farm or district

Part 10: Recommendations from other Interested Parties (To be submitted with the application)

10.1 Department of National Health
10.2 Department of Environmental Affairs
10.3 South African Bureau of Standards
10.4 Nature Conservation Bodies
10.5 Regional Government Institutions
10.6 Local Government Institutions
10.7 Department of Agriculture, Forestry and Fisheries

10.8 Department of Mineral Resources
10.9 Department of Energy
10.10 Other specialists
10.11 Non-governmental Organisations
10.12 Interested and Affected Parties
10.13 Public Participation

Part 11: WATER TREATMENT PLANT (POTABLE USE)

11.1 Summary of the scheme

11.1.1 Background
11.1.2 Design/ scheme layout
11.1.2 Levels of service

11.2 Population projections for a period of 20 years
11.3 Water resource and water availability
11.4 Existing uses
11.5 Water Demand analysis
11.6 Type of reticulation

PART12: WASTE WATER TREATMENT WORKS AND WATER TREATMENT WORKS (CONCLUSION)

The conclusion should contain a concise request for the licence required and should include accurately completed licence application forms*obtainable from the Responsible authority.

*NOTE in order for the DWS to expedite the application in a shorter time as possible the correct information is essential.

PART13: REFERENCES AND SUPPORTING DOCUMENTS

(References to back up the information supplied will be added as annexures under this section, e.g):

13.1 Geo-hydrological Report

13.2 Signed Civil Engineering Design Report

2. AGRICULTURE TECHNICAL REPORT OR BUSINESS PLAN

2.1 Introduction

2.1.1 Background
2.1.2 Applicant details including ownership structure
2.1.3 Project justification / industry overview and scope of the project
2.1.4 Specific project objectives
2.1.5 Summary of the project and authorisations required

2.2 The project area

2.2.1 General
2.2.2 Location and access
2.2.3 Summary of the project
2.2.4 Social arrangements
  2.2.4.1 Administration
  2.2.4.2 Settlement
  2.2.4.3 Beneficiaries and interested and affected parties
  2.2.4.4 Land ownership and properties on which water activities will be take place
  2.2.4.5 Socio-economics
2.2.5 Physiognomy
  2.2.5.1 Climate
  2.2.5.2 Water resources and water availability
  2.2.5.3 Land and soils
  2.2.5.4 Existing infrastructure

2.3 Water and waste management framework

2.3.1 Summary of all water uses and Annexure of forms
2.3.2 Existing lawful water uses, generally authorized water uses, exemptions
3.3.3 New water uses to be authorised

2.4 Agricultural development and production plan

2.4.1 Current crop/animal management practices
2.4.2 Proposed cropping/ animal production
2.4.3 System operations/ herd management programme
2.4.4 Production targets
2.4.5 Crop/ Animal water requirements estimates
2.4.6 Marketing plan

2.5 Water resources development plan

2.5.1 Water demand analysis
2.5.2 Water abstraction
2.5.3 Water supply plan to the production facilities
2.5.4 Water balance

2.6 Technical design (Irrigation/drainage/animal facilities) plan

2.6 Scheme layout/ Animal handling facilities layout

2.7 Facility planning

2.7.1 Existing infrastructure
2.7.2 Infrastructure requirements
2.7.3 Roads, water, electricity and telecommunications

2.8 Financing plan

2.8.1 Capital cost estimates
2.8.2 Source of funds
2.8.3 Operational costs

APPENDICES AND SUPPORTING INFORMATION

Undertaking of water uses like taking of water from a water resource and storing water for agriculture is likely to trigger other water uses. The applicant must adhere to requirements for such activities and compile requisite technical reports like;

- Hydrology and Geohydrological report
- Wetland and watercourse impact studies – undertaking of taking and storing water uses is likely to trigger other water uses such as Section 21 (c) and (i). This can be if the project entail activities listed below:
  - Civil designs for dams and pump stations
  - Watercourse crossings,

3. STREAM FLOW REDUCTION ACTIVITY REPORT

3.1 Background information

Profile of the applicant will be covered in the application forms (DW756/769 or DW758/771)

3.2 Existing lawful water uses and authorisations for the property

i. Pre 72 Authorizations
ii. Permit Number
iii. Licence Number

3.3 Location of the proposed activity and site description

i. Province, District and local Municipality, Tribal Authority or village
ii. Property (farm name, the number, portion and the full extent of property)
iii. Water Management Area and Quaternary Catchment
iv. GPS coordinates of the area applied for
v. Topographical Map.
vi. Current state of the proposed site (Grassland, cultivated land (recently/ currently cultivated and that cultivated more than 10years ago), Jungle afforestation, Virgin land, Other formal forestry, other),
vii. Climate (Rainfall and Temperature)
viii. Watercourses affected by the activity such as wetlands, rivers and lakes, etc
ix. Soil Characteristics (depth and form)
x. Slope description
xi. Land preparation methods in relation to soil characteristics and slope gradient of the proposed area
xii. Accessibility of the site in terms of the road infrastructure
xiii. Proximity of proposed activity to other Land Users
xiv. Servitudes running through the property

3.4 Description of the activity

i. Purpose of the applied water use
ii. Target Market (description, location,)
iii. Area (ha) and Crop type (genus)
iv. Planting and harvesting plan
v. Start date and life span of the Activity

3.5 Marketing plan

i. Identified target market
ii. Off take agreement
iii. Marketing channels

3.6 Water use impacts and mitigations

- Watercourses (e.g., delineation, buffering, erosion/ sedimentation, other)
- Watercourse crossings (e.g., proposed method of crossing, design, rehabilitation and maintenance)
- SFRA jungle (eradication, maintenance & control, other)
- Control of SFRA spread outside the demarcated area
- Impact on downstream users
- Other
    i. Detailed Site-Specific Management Plan
- Watercourses
- Watercourse crossings
- SFRA jungle
- Control of SFRA spread outside the demarcated area
- Impact on downstream users
- Other

3.7 Grower financing/Support plan

I. Start-up Capital, training /capacity building
i. Proof of authorizations from DEA and DAFF
ii. SAHRA authorization
iii. Copy of Basic assessment or Environmental Impact Study
iv. Proof of public participation process
v. Contracts/Agreements on Beneficiation between the company and community,

Note: Undertaking of Section 21(d) is likely to trigger other water uses such as Section 21 (c) and (i). This can be if the project entail activities listed below:

- Watercourse crossings,
- Planting within 1:100-year flood line of watercourses,
- Planting within the riparian zone and
- Planting within 32m from the edge of a watercourse
- Planting in a radius of 500m of a wetland.

The applicant will need to adhere to section 21 (c) and (i) requirements for the above activities.

4. INTEGRATED WATER AND WASTEWATER MANAGEMENT REPORT

4.1 Introduction

4.1.1 Activity Background
4.1.2 Regional setting and location of activity
4.1.3 Property description
4.1.4 Purpose of IWWMP

4.2 Conceptualization of activity

4.2.1 Description of activity
4.2.2 Extent of activity
4.2.3 Key activity related processes and products
4.2.4 Activity life description
4.2.5 Activity infrastructure description
4.2.6 Key water uses and waste streams
4.2.7 Organisational structure of activity
4.2.8 Business and corporate policies

4.3 Regulatory water and waste management framework

4.3.1 Summary of all water uses
4.3.2 Existing lawful water uses
4.3.3 Relevant exemptions
4.3.4 Generally authorized water uses
4.3.5 New water uses to be licensed
4.3.6 Waste management activity (NEMWA)
4.3.7 Waste related authorisations
4.3.8 Other authorisation (EIAs, EMPs, RODs, Regulations)

4.4 Present Environmental Situation

4.4.1 Climate
4.4.2 Regional Climate Rainfall
4.4.3 Evaporation
4.4.4 Surface Water
4.4.5 Water Management Area
4.4.6 Surface Water Hydrology
4.4.7 Surface Water Quality
4.4.8 Mean Annual Runoff (MAR)
4.4.9 Resources Class and River Health Receiving Water Quality Objectives and Reserve
4.4.10 Surface Water User Survey

4.4.11 Sensitive Areas Survey
4.4.12 Groundwater
4.4.13 Aquifer Characterisation
4.4.15 Hydro-census
4.4.16 Potential Pollution Source Identification
4.4.17 Groundwater Model
4.4.18 Socio-economic environment

4.5 Analysis and characterization of the water use activity

4.5.1 Site delineation for characterization
4.5.2 Water and waste management
4.5.3 Process water
4.5.4 Storm water
4.5.5 Groundwater
4.5.6 Waste
4.5.7 Operational Management
4.5.8 Organisational Structure
4.5.9 Resources and competence
4.5.10 Education and training
4.5.11 Internal and external communication
4.5.12 Awareness raising
4.5.13 Monitoring and control
4.5.14 Surface water monitoring
4.5.15 Groundwater monitoring
4.5.16 Bio monitoring
4.5.17 Waste monitoring
4.5.18 Risk assessment / Best Practice Assessment
4.5.19 Issues and responses from public consultation process
4.5.20 Matters requiring attention / problem statement
4.5.21 Assessment of level and confidence of information

4.6 Water and Waste Management

4.6.1 Water and waste management philosophy (process water, stormwater, groundwater and waste)
4.6.2 Strategies (process water, stormwater, groundwater and waste)
4.6.3 Performance objectives / goals
4.6.4 Measures to achieve and sustain performance objectives
4.6.5 Option analyses and motivation for implementation of preferred options (optional)
4.6.6 IWWMP action plan
4.6.7 Control and monitoring
4.6.8 Monitoring of change in baseline (environment) information (Surface water, groundwater and bio-monitoring

4.6.9 Audit and report on performance measures
4.6.10 Audit and report on relevance of IWWMP action plan

4.7 Conclusion

4.7.1 Regulatory status of activity
4.7.2 Statement of water uses requiring authorisation, dispensing with licensing requirement and possible exemption from regulation

4.8 References

4.9 Appendices: Specialist Studies

4.9.1 Geohydrology
4.9.2 Civil design
4.9.3 Wetland delineation report

5. GEOHYDROLOGY REPORT

5.1 Introduction

5.1.1 Geographical setting
5.1.2 Topography and drainage
5.1.3 Climate

5.2 Scope of Work

5.2.1 Methodology
5.2.2 Desk study
5.2.3 Hydro-census
5.2.4 Geophysical survey and results
5.2.5 Drilling and siting of boreholes
5.2.6 Aquifer testing
5.2.7 Sampling and chemical analysis
5.2.8 Groundwater recharge calculations
5.2.9 Groundwater modelling
5.2.10 Groundwater availability assessment

5.3 Prevailing groundwater conditions

5.3.1 Geology
5.3.2 Regional geology
5.3.3 Local geology
5.3.4 Acid generation capacity
5.3.5 Hydrogeology
5.3.6 Unsaturated zone
5.3.7 Saturated zone
5.3.8 Hydraulic conductivity
5.3.9 Groundwater levels
5.3.10 Groundwater potential contaminants
5.3.11 Groundwater quality

5.4 Aquifer Characterisation

5.4.1 Groundwater vulnerability
5.4.2 Aquifer classification
5.4.3 Aquifer protection classification

5.5 Groundwater Modelling

5.5.1 Software model choice
5.5.2 Model set-up and boundaries
5.5.3 Groundwater elevation and gradient
5.5.4 Geometric structure of the model
5.5.5 Groundwater sources and sinks
5.5.6 Conceptual model
5.5.7 Numerical model

5.6 Results of the model

5.6.1 Pre-facility (Mining/Industry/ Wastewater treatment plant, etc)
5.6.2 During facility (mining/ Industry/ Wastewater treatment plant) operations
5.6.3 Post-facility (mining/ Industry/ Wastewater treatment plant) operation

5.7 Geohydrological Impacts

5.7.1 Construction phase
5.7.1.1 Impacts on Groundwater Quantity
5.7.1.2 Impacts on Groundwater Quality
5.7.1.3 Groundwater Management

5.7.2 Operational phase
5.7.2.1 Impacts on Groundwater Quantity
5.7.2.2 Impacts on Groundwater Quality
5.7.2.3 Impacts on Surface Water
5.7.2.4 Groundwater Management

5.8 Decommissioning phase

5.8.1 Post-mining phase
5.8.2 Groundwater Quantity
5.8.3 Groundwater Quality
5.8.4 Cumulative Impacts
5.8.5 Groundwater Management

5.9 Groundwater monitoring system

5.9.1 Groundwater monitoring network
5.9.1.1 Source, plume, impact and background monitoring
5.9.1.2 System response monitoring network
5.9.1.3 Monitoring frequency

5.9.2 Monitoring parameters
5.9.3 Monitoring boreholes

5.10 Groundwater Environmental Management Programme

5.10.1 Current groundwater conditions
5.10.2 Predicted impacts of facility (mining)

5.10.3 Mitigation measures
5.10.3.1 Lowering of groundwater levels during facility operation (Mining/Industry/ Wastewater treatment plant, etc
10.3.2 Rise of groundwater levels post- facility operation (Mining/Industry/ Wastewater treatment plant, etc
10.3.3 Spread of groundwater pollution post- facility operation (Mining/Industry/ Wastewater treatment plant, etc

5.11 Post Closure Management Plan

5.11.1 Remediation of physical activity
5.11.2 Remediation of storage facilities
5.11.3 Remediation of environmental impacts
5.11.4 Remediation of water resources impacts
5.11.5 Backfilling of the pits.

5.12 Conclusion and Recommendations

6. WETLAND DELINEATION REPORT

6.1 Introduction
6.1.1 Terms of reference
6.1.2 Knowledge gaps
6.1.3 Study area
6.1.4 Expertise of the specialist
6.1.5 Aims and objectives

6.2 Methodology
6.2.1 Wetland identification and mapping
6.2.2 Wetland delineation
6.2.3 Wetland functional assessment
6.2.4 Determining the ecological integrity of the wetlands
6.2.5 Determining the Present Ecological State of wetlands
6.2.6 Determining the Ecological Importance and Sensitivity of wetlands
6.2.7 Ecological classification and description

6.3 Results
6.3.1 Wetland delineation
6.3.2 Wetland unit identification
6.3.3 Wetland unit setting
6.3.4 Wetland soils
6.3.5 Description of wetland type
6.3.6 General functional description of wetland types
6.3.7 Wetland ecological functional assessment
6.3.8 The ecological health assessment of the opencast mining area
6.3.9 The PES assessment of the remaining wetland areas
6.3.10 The EIS assessment of the remaining wetland areas

6.4 Impact assessment discussions
6.5 Conclusions and recommendations
6.6 References

6.6.1 The reports listed below contain the standardised and accepted methods that must be used for determining the various aspects of assessments during the WUA process related to wetlands:

1) Wetland and riparian habitat delineation document (DWS report on DWS website);
2) Wetland Buffer Guideline (SANBI WRC project and Report, on DWS website)
3) Wetland Offset (WRC report TT660/16; on DWS website)
4) High Risk Wetland Atlas (WRC Report TT659/16, on DWS website)
5) Wetland Rehabilitation in mining landscapes (WRC Report TT658/16, on DWS website)
6) Risk Assessment Protocol and associated Matrix (DWS document on DWS Website)

7. MINE CLOSURE/REHABILITATION PLAN

7.1 **Introduction**
7.1.1 Background
7.1.2 Objectives of report

7.2 **Project Description**
7.2.1 Locality
7.2.2 Environment
7.2.3 Community
7.2.4 Mine plan and infrastructure

7.3 **Legal obligation and comments**
7.3.1 Legislation

7.4 **Closure planning**
7.4.1 Site-specific closure and activity

7.5 **Rehabilitation and closure activities**
7.5.1 Progressive rehabilitation
7.5.2 Decommission and establishment

7.6 **Maintenance and monitoring**
7.6.1 Vegetation and establishment and soil nutrients
7.6.2 Groundwater monitoring
7.6.3 Surface water monitoring
7.6.4 Record-keeping and reporting

7.7 **Rehabilitation and Closure Annexure**

7.7.1 Detailed closure costing

8. PUBLIC PARTICIPATION REPORT

8.1 Introduction

8.1.1 Objectives of the public participation
8.1.2 Identification of interested and affected parties

8.2 Notification of interested and affected parties

8.2.1 Method of notification
8.2.2 Proof of notification

8.3 Notification of interested and affected parties of reports and other studies

8.3.1 Interested and affected parties
8.3.2 Access and opportunity to comment on all written submissions
8.3.3 Response to comments received: feedback to interested and affected parties
8.3.4 Disclosure of interested and affected parties interests
8.3.5 Notifying interested and affected parties of the decision

8.4 Record of issues raised

8.4.1 Addressing the comments and concerns raised by the interested and affected parties
8.4.2 Conclusions and recommendations

9. CIVIL DESIGN – MINIMUM INFORMATION REQUIREMENTS

Minimum Information Requirements:

(1) Covering letter containing the following detail:

Regional Office / Proto CMA / CMA: .....
Case Officer Details:
Name: .....
Tel:(w) .....(Cell) .....
E-Mail: .....
Project Identification: .....
Name of License Applicant: .....
Name of the Development: .....
Property Details: .....
Quaternary Catchment: .....
Water uses identified in terms of Section 21 (NWA, Act 36 of 1998): ... .

(2) Design report and drawings are to be signed by PrEng; giving name, registration number and status of registration

(3) The technical report, be it a design report or IWWMP is to be to a sufficiently advanced stage of design to demonstrate compliance with engineering norms and standards as prescribed by the Engineering Professions Act, Act 46 of 2000, Board Notices, 41 of 2017 and 138 of 2015 as amended and the Technical Advisory Note: Stage of Design required for statutory review in support of license considerations by authorities.

(4) The technical report content should concisely demonstrate compliance with the Norms and Standards of the profession for infrastructure activating water uses for which guidance on standards to be complied with is provided in the Technical Advisory Note: Specialist Reports on Civil Design in support of water use, waste management and/or mining license applications.

(5) For water uses 21 f, g & j: The pollutant risk is to be assessed in accordance with the NEMWA Regulations 2013 and NEMWA Regulations 2015 (as amended) as a minimum

(6) The life span or service life of the activity is to be identified which is made up of the operating and post-closure (polluting or rehabilitation) periods.

(7) For facilities/developments requiring a Section 21 g water use license and/or

waste management license, the report and drawings shall demonstrate compliance with the performance based regulations of NEMWA for which guidance is provided on both design and construction quality assurance at the following links:

- Design: http://sawic.environment.gov.za/documents/13828.pdf
- Construction Quality Assurance: http://sawic.environment.gov.za/documents/12496.pdf and http://sawic.environment.gov.za/documents/12493.pdf

(8) Engineering drawings shall be legible to the naked eye when printed as an A3 size.

(9) Applicants shall take responsibility for reports and drawings submitted by them or on their behalf and shall exclude disclaimers of any form.

10. MINIMUM INFORMATION REQUIREMENTS FOR A WATER USE LICENCE APPLICATION FOR UNCONVENTIONAL GAS ACTIVITIES

10.1 PREAMBLE

This Minimum Requirement document is a decision support system and will be used for the evaluation of water use application for controlled activities (i.e. unconventional gas activities) in terms of the water protection principles. The document has been compiled to respond to unconventional gas activities which are a complex and unknown technology and it would serve well to create guidance which responds in with a fit-for-purpose approach.

10.2 DEFINITIONS

This section covers all definitions including those of the regulations and potential licences for ease of use

In these Minimum Requirements with respect to the Unconventional Gas Regulations, any word or expression to which a meaning has been assigned in the Act shall have that meaning and, unless the context otherwise indicates-

"**activity**" means prospecting, exploration operation or production operation as defined in the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) including all associated stockpiles, waste management infrastructure, dams and sidings under control of a permit holder.

"**alternatives**" in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to–

(a) the property on which or location where it is possible to undertake the activity; the type of activity to be undertaken;
(b) the design or layout of the activity;
(c) the technology to be used in the activity; the operational aspects of the activity; and the option of not implementing the activity;

"appraisal" means the assessment of the potential, economic viability, properties and extent of a discovered reservoir through the acquisition of more data from the drilling and testing of wells. This phase follows immediately after successful exploration;

"baseline water resource assessment" means the identification and characterisation of all potentially affected water resources pre-stimulation. This characterisation of the water resource includes the quality and quantity of the water resources within the target area by means of a hydrocensus or any other required assessment methods with a minimum of three km radius

from the furthest point of potential horizontal drilling or as determined in an environmental impact assessment process by an independent specialist(s);

"baseline monitoring" means monitoring of key indicators to establish reference conditions of potentially affected water resources prior to stimulation (pre-exploration and production exposure) to form the basis for a change over time assessment;

"borehole" includes a dug well, excavation, or any other artificially constructed or improved underground cavity which can be used for the purpose of intercepting, collecting or storing water in or removing water from an aquifer; observing and collecting data and information on water in an aquifer; or recharging an aquifer.

"coalbed methane" means petroleum (in any state) occurring naturally in strata associated with coal;

"continuous monitoring" means monitoring of the quantity and quality of potentially affected water resources that takes place on a continuous basis throughout all phases of operations including post-decommissioning as per the monitoring plan;

"controlled activity" means the controlled activity declared by the Minister by notice in the Government *Gazette* No. 39299, Notice 999 of 2015 in terms of section 38 of the Act in respect of the exploration and production of onshore naturally occurring hydrocarbons that requires stimulation, including hydraulic fracturing and underground gasification, to extract, and any activity incidental thereto that may impact detrimentally on the water resource;

"cumulative impact" in relation to an activity, means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impact eventuating from similar, auxiliary or related activities or undertakings in the area;

"designated agency" means the Petroleum Agency South Africa;

"exploration" means the acquisition and processing of data or any other activity with the intention of locating an economically viable regulated substance. This definition includes the

appraisal phase of any controlled activity, developing conceptual geological and geo-hydrological models and drilling of exploration wells;

"exploration work programme" means the approved exploration work programme indicating the operations to be conducted on the exploration area during the validity of the exploration right, including the details regarding the area to be targeted during exploration (landowner consent, site description details with coordinates of planned exploration and monitoring wells), exploration activities, phases, equipment to be used and estimated expenditures and timeframes for the different exploration activities and phases;

"event" means an incident or situation which occurs in a particular place at a particular time as a result of a controlled activity, and originating from a seismic event;

"geosite" is a data collection point that has a particular geological and/or geohydrological significance. This may include a borehole, drain, dug well, lateral/radial arm collector, mine, seepage pond, sinkhole, spring, tunnel, and well point.

"groundwater" means water found in the subsurface in the saturated zone below the water table;

"horizontal edge of an exploration well" means the furthest underground reach of a horizontal well;

"horizontal well" means a well where the wellbore is drilled vertically to a kick-off depth beyond which the wellbore is deviated to run parallel to the target formation. Consideration is given to a deviated well;

"hydraulic fracturing" means injecting fracturing fluids into the target formation through the exploration or production well at a force exceeding the parting pressure of the rock to induce fractures through which naturally occurring hydrocarbons can flow, and applicable tore-fracturing;

"flow-back" means all hydraulic fracturing fluid and other fluids that return to the surface after hydraulic fracturing, or other, stimulations have been completed and prior to the well being placed into production;

"fracturing fluid" means the mixture of the base fluid and all the hydraulic fracturing additives used to perform hydraulic fracturing;

"geophysical survey" means the systematic collection of geophysical data for assessing subsurface conditions using sensing instruments to collect data from above or below the Earth's surface;

"hydraulic fracturing programme" means a programme developed based on risk assessment and describes control and mitigation measures for fracture containment and for any potential induced seismicity during shale gas extraction and coalbed methane extraction;

"hydrocensus" means the systematic collection of information related to all water resource features potentially affected within target area;

"hydropedology" refers to the interactive relationship between soil and water;

"Interested and Affected Parties (IAPs)" means a group/s of people who have a concern about a particular development, project, policy or action and who need to be consulted during the process of decision making;

"incident" means an incident as defined in Section 20(1) of NWA arising from the controlled activity as conducted under a licence in which a substance-

(a) pollutes or has the potential to pollute a water resource; or

(b) has, or is likely to have, a detrimental effect on a water resource;

"incidental activity" includes all operations and activities reasonably necessary for undertaking the controlled activity, including–

(a) the drilling of wells that will be stimulated;
(b) the injection of water or some other substance into a natural reservoir in order to enhance production of petroleum or another regulated substance;
(c) the processing of substances recovered from a well;

(d) the onsite treatment of wastewater including but not limited to flow-back and produced water;

"identifier" means boreholes and exploration and production wells that follow a numeric system.

"independent specialist" means a person who provides specialist services and who is able to provide independent and autonomous opinions and has no business, financial, personal or other interest in the activity, application or appeal in respect of which that person is appointed other than fair remuneration for work performed in connection with that activity or that there are no circumstances that may compromise the objectivity of that specialists;

"integrated water and waste management plan" means a plan as contemplated in terms of Regulation GN704;

"interflow" The rapid flow of water along essentially unsaturated flow paths, water that infiltrates the subsurface and moves both vertically and laterally before discharging into other waterbodies.

"monitoring" in relation to water resource means repeated sampling of water resource quality and quantity (as a function of water levels and abstraction rates) for the purposes of building time series data on water resources that would indicate seasonal quality and quantity fluctuations;

"monitoring borehole" means a drilled borehole which is used to monitor groundwater levels, abstraction rates and water quality over a period of time for a specific groundwater monitoring objective.

"monitoring plan" means the setting of goals and targets in a guideline document for monitoring purposes.

"naturally occurring hydrocarbons" means an organic compound containing only carbon and hydrogen naturally occurring in petroleum, natural gas, coal and bitumen;

"NORMs" means naturally occurring radioactive material that naturally exists in natural materials;

"onshore" means situated or occurring on land;

"operational phase" means a term used to describe activities for petroleum exploration and production.

"petroleum" means a complex mixture of naturally occurring hydrocarbon compounds found in rock strata ranging from solid to gas.

"post decommissioning monitoring" means water resource quality monitoring that takes place in areas where wells have been decommissioned as per the approved monitoring plan;

"process water" includes all water related to exploration and production (including but not limited to flowback and produced water);

"production" means the production of the regulated substance and is the phase that occurs after successful exploration;

"produced water" means all fluids displaced from the geological formations, which can contain substances that are found naturally in the formations but excludes hydraulic fracturing flowback;

"record" includes-

(a) record in the form of a book or document, or in the form of a map, photograph or drawing;

(b) a record in the form of manually recorded data, electronic data; geological samples;

(c) samples of-

(aa) a regulated substance; or

(bb) water;

"regulatory objectives" are the objectives that must be achieved under the Act, these Regulations and the conditions of a water use licence;

"regulatory requirements" mean the requirements imposed by the Act, these Regulations or the conditions of a water use licence;

"regulated substance" means-

(a) petroleum,
(b) hydrogen sulphide, nitrogen,
(c) helium,
(d) carbon dioxide, or
(e) any other substance that occurs naturally in association with petroleum;

"resource target" means the geological formation(s) targeted for potential economic production of hydrocarbons;

"saturated zone" means the subsurface zone below the water table where interstices are filled with water under pressures greater than that of the atmosphere;

"stimulation" means the act of increasing a well's productivity by artificial means such as hydraulic fracturing, gasification, depressurisation, acidising or other techniques, also referred to as manipulation;

"stratigraphic well" means any well or hole drilled for the purpose of obtaining information pertaining to a specific geological condition that might lead toward the discovery of petroleum with no intent to produce petroleum from such a well;

"strategic water source area" is a natural source area for surface water and/or groundwater that provides disproportionately large volumes of water per unit area and that is considered of strategic significance for water security from a national planning perspective;

"suspended well" means a well that has been inactive for a period exceeding 3 years, depending on the type of well. The well is currently not considered to be economically viable but could become so in the future with improved technology, infrastructure, or commodity pricing;

"target area" means the precinct for which an exploration right has been granted /the potential area that may be detrimentally impacted on by the activity identified in the EIA process;

"the Act" means the National Water Act, 1998 (Act No. 36 of 1998);

"thermal spring" means a point of groundwater discharge where the water temperature exceeds the regional thermal gradient;

"unconventional" in relation to oil or natural gas means oil and natural gas that is produced by means that do not meet the criteria for conventional production and requires stimulation including coalbed methane and underground coal gasification;

"underground coal gasification" means the conversion of coal to gas underground by ignition of coal seam, involving the drilling of a two well system into the coal seam, one for injection of the oxidants and another to bring the product gas to the surface, with a connecting path;

"water resource quality" means the quality of all the aspects of a water resource including-

(a) the quantity, pattern, timing, water level and assurance of instream flow,

(b) the water quality, including the physical, chemical and biological characteristics of the water, the levels and volumes of production from groundwater boreholes,

(c) the character and condition of the instream and riparian habitat, and the characteristics, condition and distribution of the aquatic biota;

"water use licence" means a licence required or issued in terms of section 40 of the Act for the following purposes or phases for the controlled activity–

(a) exploration; or

(b) production

"well" means any drilled hole used for the purpose of exploration or production of naturally occurring hydrocarbons. This includes holes drilled in any state of use or disuse;

"well examination scheme" means arrangements for examination of the well conducted by an independent and competent person that are—

(a) recorded in writing, and

(b) suitable for ensuring, together with the assistance of any other measures the holder may take, that the well is designed, constructed, operated, maintained, modified, suspended, and decommissioning so that,

(aa) so far as is reasonably practicable, there can be no unplanned escape of fluids/gas from the well, and

(bb) risks to the health and safety of persons from the well or anything in it, or from strata, to which the well is connected, are as low as is reasonably practicable;

"wellfield" means group or cluster of boreholes in an area used collectively to supply sufficient groundwater to a user or users;

"well operator" means any person in charge of the development of a lease or drilling and operation of a well;

"well pad" means the surface area, including a well, occupied by all equipment or facilities necessary for or incidental to drilling, hydraulic fracturing, gasification, or other techniques, production or plugging a well;

10.3 WATER USER FACTORS

10.3.1 An applicant may apply for a water use licence to conduct exploration for one or more separate areas, provided that:

(a) the areas for which exploration is applied for are outside the prohibited areas as defined in the *Regulations no xxx (i.e. regs for Unconventional gas activities);*

(b) scientific evidence for zone of influence as outlined in regulation 7 *(2) of Regulation No. xxx*, within prohibited areas has been provided to the responsible authority for review;

(c) records (includes extent and position of the explored area and wells, monitoring boreholes, baseline water quality monitoring, specialist studies, and other required studies) exist.

10.3.2 The following water user factors must be submitted to the Department as part of the water use licence application-

(a) the applicant's corporate policies that address the achievement of regulatory objectives;

(b) the applicant's procedures or practices to achieve compliance with regulatory

requirements and objectives;

the extent to which an applicant/s has adopted and implemented a comprehensive and effective risk management system;

(c) the extent to which an applicant/s has established systems to monitor, evaluate, audit and review compliance against regulatory requirements and objectives;

(d) the systems that the applicant has adopted to identify and report serious and reportable incidents;

(e) the extent to which an applicant has established a comprehensive and effective emergency response plan;

(f) the applicant's practices and procedures to provide appropriate communication of regulatory requirements to employees, contractors and visitors, including site induction, ongoing training and supervision;

(g) the applicant's technical staff competence and proven training for site specific aspects;

(h) a mechanism to respond to and communicate with external parties on compliance matters

(i) the applicant's record in achieving regulatory objectives and regulatory requirements and the extent to which an applicant has allocated resources to compliance systems.

10.4 PLANNING AND ASSESSMENTS

Application of this Part

Read with sections 27 and 41 of the Act it is reasonable to require the applicant to obtain and provide it will an assessment of the proposed activity on the resource quality. An assessment must include a water resource assessment and assessment of conditions below ground.

10.4.1 Baseline Water Resource Assessment

10.4.1.1 A baseline water resource assessment must include–

i. the name, qualifications and relevant experience of the person who compiled the assessment;
ii. a description of the methodology adopted in compiling the assessment;

iii. a description of the assumptions and uncertainties or gaps in knowledge;
iv. a hydrocensus;
v. water availability and accessibility including regional water uses and stresses
vi. the proximity of the proposed activity, including any production wells or monitoring boreholes, to the prohibited areas;
vii. identify all potential groundwater dependant ecosystems and potentially affected water resources that may be impacted on;
viii. a determination of the water quality in the targeted area and an assessment of factors that influence these;
ix. a conceptual groundwater, geological and hydropedological models describing major geological formations and structures with geological cross sections, major aquifers, groundwater flow, interflow, possible interactions between groundwater and surface water and contaminant transport potential where applicants must use a 3D seismic array and any other suitable method to map locations of deep aquifers and pre-existing fault risks that are to be avoided during fracture stimulation or any other stimulation activities;
x. An integrated water and wastewater management plan as well as the planned management of flowback and produced water shall be submitted;
xi. The source of water for exploration or production, which must exclude potable sources, as well as auxiliary activities with associated risk and environmental impact assessment for transport, storage, reuse, treatment and disposal.

10.5 Assessment of conditions below ground

1) An assessment of conditions below ground/ geological overview report involves the assessment of geological, geohydrological and hydropedological conditions in the area where the proposed activity will take place and must be concluded before any well is designed.

2) A geological overview report/ assessment of conditions below ground, in relation to water protection,

(a) must include -

i. the name, qualifications and relevant experience of the person who compiled the assessment;

ii. a description of the methodology adopted in compiling the assessment to include but not limited to groundwater flow direction, source-pathway-receptor description and impacts;

iii. a description of the assumptions and uncertainties or gaps in knowledge;

iv. a geological map of the area at relevant scale and with details that will allow understanding of potential structural problems;

v. an analysis of all available geological information such as published maps, unpublished

sheets, satellite imagery, scientific papers and existing stratigraphic well information and core, for water resource protection;

(b) information on–

i. geophysical profiling (2D or 3D) to the depth of the target formation and below the target formation;

ii. stratigraphic well drilling to understand the regional stratigraphy with complete geochemical and, rock-water interaction study, including modelling, must be conducted with structural complexity interpretation;

iii. proposed depth(s) to the top and the bottom of the formation into which well fracturing fluids and/or reactants are to be injected or well stimulation applied;

iv. borehole analysis: core logging, downhole geophysics, camera, water strikes, coordinates, hydro geochemical character injection tests in fractures or formations.

v. physical and chemical properties of the stratigraphic formations such as groundwater age profile down the borehole, porosity, permeability, total organic carbon, clay and mineralogy, capacity of rock to absorb/immobilize pollutants;

vi. fracture character (orientation, aperture, continuity);

vii. groundwater pressure head profile down the length of the well;

viii. detailed mapping of geological structure during drilling (faults, folds, intrusive bodies, fracture density) and development of geological cross sections of the study area to develop a3D understanding of the geology and aquifers based on surface geology, exploration borehole and geophysical profiling showing the stratigraphy, including the presence and morphology of dolerite and kimberlite and tectonic structures;

ix. groundwater quality and chemistry profile;

x. model of fluid migration in the geological formation;

xi. geohazards associated with the geological formations and structures and solutions to overcome such hazards;

xii. deep formation water quality and chemistry;

xiii. the volumes and quantity of produced water that may be received at surface during and

after drilling operations; and

xiv. information on interconnectivity, hydropedology and interflow of water resources.

10.6 WATER RESOURCE QUALITY MONITORING

10.6.1 Baseline water resource quality monitoring for application for a water use licence for exploration and production:

(1) An applicant must develop a water resource quality monitoring plan (the "plan") meeting the requirements set out in this Minimum Requirement document and submit the plan to the Department's relevant Provincial Operations indicating proposed monitoring sites, monitoring boreholes and plans during licence application stage.

(2) Subsidence management plans for the management and control of potential subsidence caused by loss of water from the formation and changes in geology over time must be in place and submitted during licence application stage.

(3) The water resource quality monitoring plan must be accompanied by:

(a) geohydrological conceptual model based on the existing data including geology and hydro stratigraphy;

(b) a preliminary work programme.

10.6.2 A person, who has lawful access to land on which the use of water will take place must on that property and to the extent of the projected zone of influence of the controlled activity or land establish baseline monitoring of water resources in accordance with the monitoring plan.

10.6.3 Groundwater preliminary information includes the following activities;

(a) Drilling shallow and deep monitoring boreholes as per the approved plan with installed monitoring devices;

(b) All monitoring points including boreholes shall be marked and clearly labeled. Monitoring points shall be identified according to the numbering systems of the Department as provided by the relevant Provincial Operations;

(c) Hydrogeochemical analysis at monitoring points-

(i) Quarterly monitoring for: hydrochemistry parameters (Field pH, Electrical

Conductivity, Temperature, Dissolved Oxygen, Total Dissolved Solids), the suite of major, secondary and trace elements organics (VOCs, SVOCs and PAHs), NORM, stable isotopes (C,H,O and N including but not limited to: methane δ13C, methane δ13D, water δ13C, water δ13D,DIC δ13C, ethane δ13C and ethane δ13D), radioactive isotopes (uranium, thorium, radium and strontium) as well as radioactivity (gross alpha radioactivity, gross beta radioactivity) . The monitoring must take into account baseline monitoring objectives as established and defined in the plan.

(ii) Monitor water levels, Electrical Conductivity and Dissolved Oxygen in groundwater monitoring boreholes using manual control readings and real-time monitoring where applicable. Monitor for a minimum of two (2) years as per plan with installed monitoring devices where applicable.

10.6.4 Surface water preliminary information includes the following activities;

(a) Monitoring of water levels as per the plan;

(b) Interpretation of information relating to the interconnectivity of surface water to groundwater (where applicable);

(c) Information relating to the sub-surface connectivity of activities to surface water resources and water supply infrastructure.

(d) Sample for water quality analysis at monitoring points-

i. Monthly for hydrochemistry parameters (Field pH, Electrical Conductivity, Temperature, Dissolved Oxygen, Total Dissolved Solids), the suite of major, secondary and trace elements, organics(VOCs, SVOCs and PAHs), NORM, stable isotopes (C,H,O and N including but not limited to: methane δ13C, methane δ13D, water δ13C, water δ13D,DIC δ13C, ethane δ13C and ethane δ13D), radioactive isotopes (uranium, thorium, radium and strontium) as well as radioactivity (gross alpha radioactivity, gross beta radioactivity). The monitoring must take into account baseline monitoring objectives.

ii. Monitor water levels, Electrical Conductivity and Dissolved Oxygen using manual control readings and real-time monitoring where applicable.

iii. Monitor for a minimum two (2) year as per plan with installed monitoring devices.

10.6.5 An application for a water use licence for exploration shall be supported by a report on

baseline monitoring and its interpretation.

10.6.6 An application for a water use licence for production shall be supported by a report on both baseline monitoring, exploration phase monitoring and its interpretations.

10.6.7 Analysis shall be carried out by qualified third party organisations using recognized, SANAS accredited and internationally accredited analytical methods.

10.7 SITE SELECTION, ESTABLISHMENT AND CONTAINMENT

10.7.1 Site location

10.7.2 Site location information on the exploration and/or production work programme accompanying the application must show information on-

(a) the location(s) of the proposed exploration well(s) within the target area established by a field survey;

(b) location of water monitoring boreholes and any production boreholes in relation to the planned well(s) within the target area, as determined from the hydrocensus;

(c) the location of all buildings, public roads, railroads, and water resources within the target area;

(d) drainage of the site and all aspects related to development of the site;

(e) proposed location(s) of compressors, lodgings etc. associated with the drilling operations; and

(f) proposed access roads to the sites(s).

(g) The proposed well location(s) shall be designated by coordinates in WGS84 and will specify accuracy as well as method of coordinate determination.

10.7.3 Water balances

1) The Applicant shall develop and submit a water balance during application and it shall:-

(a) be based on data collected from installed flow measurement devices to measure the amount of water abstracted from target and/or surrounding areas, received, consumed, transported, and/or discharged as required in order to ensure that the flow of at least 90% of the total water in use is measured with the remaining 10% or less being calculated;

(b) incorporate accurate values determined from suitable measurement or modelling for

rainfall, runoff, seepage and evaporation from all facilities where these components of the water balance may potentially come into play;

(c) account for seasonal changes from all flow values affected by rainfall and or evaporation;
(d) be computerised in order that it can be updated at least monthly with measured and modelled data after licensing;
(e) account for and reflects all possible interconnections between the operations and the surface and groundwater resource and how these will be avoided, mitigated;
(f) be used to generate water management reports to assist in the management of the impact of the operations on the water resource; and
(g) be submitted to the Department on a bi-annual basis together with the monitoring data and report unless stipulated otherwise in a water use licence.

2) For stimulation activities the applicant must measure and disclose in writing to the Responsible authority the operational data, at the application stage, on-

(a) volumes and chemistry of water to be used;
(b) the volumes and characteristics of waste water and reuse, recycle and treatment activities; flowback and produced water disposal methods;
(c) fracturing fluid additives (constituents) concentrations and volumes and its breakdown components with mass balances and source pathways;
(d) gas pressures of the target area;
(e) fracturing impacts and site containment which are to be included in the geohydrological and geotechnical modelling; and
(f) any induced seismicity employing macro and micro seismicity monitoring with risk profiling to water resources.

10.7.4 Site Safety

1) Applicants shall ensure provision, for consideration with the application for a water use licence, of:

a. risk assessments in terms of well leakage incidents;
b. coordination of safety measures associated with water resource pollution incidents;
c. prevention of fires and explosions with particular reference to blowouts and escape of flammable gas;
d. general fire protection;
e. floods or other natural disasters; detection and control of toxic gases; site planning and

design.

10.7.5 Storm water management and control for consideration with the application for a water use licence

1) Applicants shall ensure that storm water is managed in a sustainable manner over the life cycle of the activity and shall submit the designs to the Department for approval with the licence application.

2) Storm water designs shall take into account different hydrological conditions in the following manner -

a. consider soil types, soil properties and hydropedological systems concerning location;

b. delineate the site area into clean and dirty areas;

c. maximise the clean area and the volume of clean stormwater runoff that is routed, un-impacted, to the nearest receiving watercourse;

d. design and construct all clean water conveyance infrastructure in such a manner as to guarantee the serviceability of such conveyances for flows up to and including those arising as a result of the maximum flood with an average period of recurrence of once in 50 years;

e. plan to collect the runoff arising from any dirty area during a rainfall event into the dirty storm water system;

f. contain all dirty storm water runoff in a dedicated storm water dam which is designed and constructed, to have a spillage frequency of not more than 2% and to have a minimum freeboard of 0.8 metres above full supply level, unless otherwise specified in terms of Chapter 12 of the Act; specification on the lining for the dam must also be stipulated.

3) The dirty storm water dam and conveyance infrastructure shall be designed appropriate to the level of threat posed by the contaminated water in the dirty water system.

10.7.6 Pollution prevention

1) Equipment required and contingency plans to give effect to remediation of pollution

incidents shall be submitted as part of the integrated water and waste management plan, for the consideration for a water use licence.

2) An applicant must prepare an integrated water and waste management plan for approval with the following components:

a) An updated water balance containing flowcharts and data derived from a dynamic water balance model;
b) Water sourcing options including re-use and recycling,
c) Pollution prevention and impact minimisation plan;
d) Emergency spillage incident management plan
e) Storm water management plan
f) Water conservation and demand management strategy
g) Post closure water management plan; and
h) Water monitoring and reporting plan that addresses the whole life of activity and after closure certification was granted.

3) Fluids no longer required as well as wastewater (produced water and flowback) must always be disposed off at an approved and appropriate disposal site which has the capacity and appropriate design to treat such waste. The applicant must demonstrate this ability in the application process through provision of wastewater storage and treatment facilities.

10.7.7 WELL MANAGEMENT

10.7.7.1 Well risk identification and assessment

1) The applicant must ensure that wells are designed, constructed and assessed as per the standards set by the designated agency to ensure water protection.

2) The applicant must submit a well risk management plan which must include the identifying, assessing and mitigating of hazards that may emanate from wells during exploration and/or production phases.

3) The applicant must ensure that the following specific design and operational risks are considered as part of the well risk management plan, including -

a. aquifer isolation;
b. all permeable zones should be assessed to achieve adequate isolation by casing with bentonite and verified cement;
c. surface casing should be at a suitable distance to the deepest aquifer encountered (irrespective of aquifer water quality), along with sufficient cement, to protect potable groundwater and prevent migration of high salinity groundwater into the stimulation well or any other aquifers. The final well decommissioning of the

stimulation well design should be considered at the well design phase;
d. casing deformation and cement degradation;
e. fracturing containment;
f. seismicity induced by hydraulic fracturing and stimulated activities;
g. deformation of aquifers and geological strata due to injection and/or extraction of fluids, reactants and/or gas; and
h. surface subsidence due to deformation of aquifer and geological strata during fluid and/or gas extraction.

4) All control measures must be based on well design risk assessments and the environmental risk assessments and these should be documented in the well's basis of design documentation and well operations programme or equivalent document names.

10.7.8 HYDRAULIC FRACTURING

10.7.8.1 Fracturing containment

(1) The applicant shall develop a hydraulic fracturing programme (HFP), based on the risk assessment and modeling, that describes the control and mitigation measures for fracture containment and for any potential induced seismicity.

(2) The proposed design of the fracture geometry should be included in the HFP including fracturing target zones, sealing mechanism(s) and aquifers, so as not to allow fracturing fluids to migrate from designated fracture zone(s).

(3) The HFP must include the proposed depth(s) to the top and the bottom of the formation into which well fracturing fluids are to be injected.

(4) Geological discontinuities that might impact the hydraulic fracturing seal mechanism should be thoroughly researched and the assessment documented and referenced in the HFP to demonstrate that fracturing fluids cannot migrate, via natural pathways beyond the designated fracturing zones, vertically and horizontally.

(5) The applicant shall submit a HFP during application stage for consideration with the water use licence application.

10.7.9 Seismicity induced by hydraulic fracturing

(1) Applicants shall include the induced seismicity risk assessment control and mitigation measures in the HFP.

(2) Risk of fault movement can be mitigated by the identification of stressed faults and by the avoidance of fracturing fluids and stimulation reactants entering stressed faults.

(3) Applicants should not overlook the potential presence of faults that cannot be detected given the limits of seismic reflection surveys.

(4) Once faults have been identified and geological stresses characterised, applicants can assess the orientation and slip tendency of faults and bedding planes. These must be identified vertically (above and below formation), horizontally and mitigation measures for groundwater protection included in the programme for approval.

(5) Apart from describing risk assessment and control measures in the HFP, applicants shall institute relevant seismic and micro-seismic monitoring using and shall report such monitoring results to the Department on a quarterly basis.

10.7.10 Fracturing fluids

(1) An applicant, shall as part of the impact assessment, submit the following information to the Department as part of the HFP-

a. possible alternatives to the fracturing fluids or chemicals to be used (where applicable);
b. possible risk of the above on the environment and water resources with pathways defined; and
c. remediation required if a pollution incident/s were to occur.

(2) An applicant shall submit and integrate into its HFP a plan for the handling, storage, re-use, transportation, treatment and disposal of hydraulic fracturing fluids and flow- back.

10.7.11 Management of Flow-Back and Produced fluids

(1) The applicant shall disclose and submit to the Department, the following information regarding management and handling of flow-back or produced fluids-

a. estimated an actual volume of fluids to be recovered during flowback;
b. the expected rates, pressures and temperatures of fluids recovered and produced; water compositional analysis;
c. any identified contamination issues; any radioactive contamination fluids;
d. proposed method of handling recovered fluids, including but not limited to tank requirements, pipeline requirements, flow-back and storage periods, flaring, recycling and re-usage;
e. proposed treatment and disposal methods of the recovered fluids; and proposed volume

of flow-back fluids to be recycled and re-used.

f. information on how much fluids are absorbed by formations and geological impacts ass contained in the hydro-geochemical report.

10.7.12 Wastewater Storage and Disposal

a. Information and requirements relating to the onsite storage and disposal of wastewater shall be addressed in the water use licence application upon site specific considerations and assessments.

10.7.13 Management of dewatering operations and produced water at exploration and production phases

(1) The applicant shall prepare comprehensive water management and monitoring plans for the management of dewatering and produced water to include water balances, water chemistry and ash content impacts (where relevant), acid mine drainage generation potential (where relevant), relevant storage pond lining specifications and any other associated activity.

(2) Subsidence management plans must be in place for the management and control of potential subsidence caused by loss of water and hydrocarbon from the formation over time. Pre-extraction contours shall form part of baseline assessments and reporting requirements.

(3) The deformation of geological formation shall be predicted in models with comprehensive risk assessments and mitigation measures defined. The effects of such deformation to the hydrological regime shall be included in the modeling reports. Monitoring shall continue before, during and after operations with results and interpretation of information provided to the Responsible Authority. The applicant shall submit such models (for the conceptualized conditions before, during and after operations) as part of the application.

10.7.14 Establishing a gasification site

(1) The applicant must at application process stage prove (through the submission of a site characterization, risk and impact assessment study) to the Department that:

(a) the gasification site selected is properly sited and characterized to ensure that no contaminated plume migration from the burn chamber towards freshwater water aquifers occurs.

(b) a Risk-Based Decision-Making Process has been used in the design of UCG sites. Where possible, the following pre-assessment must be conducted as part of the site characterization process: site stratigraphy, structure and hydrogeology, characterization of the nature and mobility of by-products of coal burning, including organic and inorganic compounds, process variable (e.g., temperature, O2) impacts on product/by product yield, permeability changes from cavity development and collapse, effects of buoyancy, thermal and mechanical force changes on contaminant transport and the potential for natural bioattentuation.

(c) a low permeability/impenetrable barrier (i.e. geologic seals) between coal seam and

overlying and underlying aquifers exists.

(d) the casing material of the injection as well as the production boreholes must be able to resist extreme thermal and mechanical stresses such as sulphidation and oxidation.

(e) the casings of both the injection as well as the production wells must:

i. be cemented to be able to resist high pressures and temperatures so as to protect groundwater resources.

ii. record the efficacy of the cement barrier by cement bond logging.

(2) Mechanical integrity tests must be conducted on annual basis for both the injection as well as the production wells.

(3) The site characterization, risk and impact assessment study shall include risk assessment and modeling that describes the control and mitigation measures for chamber instability and for any potential subsidence.

Annexure: G

Water Use Licence and Amendment Application Processing

Category	Agriculture and Forestry	SOEs; Private Developers and Government	Mines and Industries
Water Use Licence Application Processing	R8500	R11 500	R15 000
Water Use Licence Application Processing for Early Renewal Only	R4 250	R5 750	R7 500
Water Use Licence Application Processing for early Renewal with new uses and/or Amendment	R8 500	R11 500	R15 000
Water Use Licence Application Processing for Amendment in terms of section 50 and 51 of the Act.	R2 150	R2 850	R3 750
Water Use Licence Application fee for compulsory Licensing	R2 150	R2 150	R2 150
Condonation fee for Late application of a Water Use Licence for compulsory Licensing	R3 750	R3 750	R3 750

Banking Details for Electronic Payment of Water Use Licensing Fee

a) Name: Department of Human Settlements, Water and Sanitation. Bank: First National Bank. Account Number: 62030646311 Branch Number: 210554. Account Type: Current Account
b) Name: Department of Human Settlements, Water and Sanitation. Bank: ABSA Bank. Account Number: 4054697285 Branch Number: 632005. Account Type: Current Account
c) Name: Department of Human Settlements, Water and Sanitation. Bank: Standard Bank. Account Number: 010215808 Branch Number: 010045. Account Type: Current Account.

ANNEXURE H I

Security and guarantee

DEED OF SURETYSHIP (*to be completed prior to award of licence*)

WHEREAS: the responsible authority awarded a licence to ……(hereinafter called "the Licensee") dated ……/……/…….for the authorisation of water use activities in the licence, and it is provided by such licence that the Licensee shall provide the responsible authority with security by way of suretyship for the due and faithful fulfilment of such conditions of the Licensee;

AND WHEREAS ……
Has/have at the request of the Licensee, agreed to give such security;

NOW THEREFORE WE,

……
do hereby guarantee and bind ourselves jointly and severally as Sureties and Co-principal Debtors to the responsible authority under renunciation of the benefits of division and excursion for the due and faithful performance by the Licensee of all the terms and conditions of the said Licence, subject to the following conditions:

1. The responsible authority shall, without reference and /or notice to us, have complete liberty of action to act in any manner authorised and/or contemplated by the terms of the said Licence, and/or to agree to any modifications, variations, alterations, directions or extensions of the conditions under said Licence, and at that its rights under this guarantee shall in no way be prejudiced nor our liability hereunder be affected by reason of any steps which the responsible authority may take under such Licence, or of any modification, variation, alterations of the conditions which the responsible authority may make, give, concede or agree to under said Licence.
2. The responsible authority shall, at any time during the subsistence of this licence and within five years after the licence has expired, be entitled, without reference to us, to release any securities held by it, and to give time to or compound or make any arrangement with the Licensee, if any licence condition or provision of the Act is being violated.
3. This guarantee shall remain in full force and effect until the issue of the Certificate of Rehabilitation in terms of the Licence, unless we are advised in writing by the responsible authority before the issue of the said Certificate of his intention to institute claims, and the particulars thereof, in which event the guarantee shall remain in full force and effect until all such claims have been paid or liquidated.
4. Our total liability hereunder shall not exceed the sum of ……(R……)
5. The licensee hereby attaches a letter of credit from the bank, a surety or a bank guarantee, a bond, or an insurance policy**[*delete whichever is not applicable]**, in favour of the responsible authority
6. We hereby choose *domiciliumcitandietexecutandi* for all purpose arising hereof at……
……

1

IN WITNESS WHEREOF this guarantee has been executed by us at ..... on this ..... day of.....20...

As witnesses

1. _____

2. _____

Signature: _____

Duly authorised to sign on behalf of _____

Address

ANNEXURE H II: List of water uses for which security is required

Water Use(s)	Required to provide security
Section 21 b	In-stream dams
Section 21 c and i	Sewer pipelines within the Regulated Areas
Section 21 d	500 ha and above
Section 21 f	All activities
Section 21 g	All activities
Section j	Mining related activities

ANNEXURE I

Water Use audit report

Objective of the water use audit report

10.7.14.1 The objective of the water use audit report is to-

(a) report on-

i. the level of compliance with the conditions of the water use licence; and
ii. identify and assess any new impacts and risks as a result of undertaking the water use;

Content of water use audit reports

10.7.14.2 (1) An audit report prepared in terms of these Regulations must contain-

(a) details of-

i. the person who prepared the audit report; and
ii. where required the expertise of independent person (and confirmation of independence) that compiled the audit report;

(b) an indication of the scope of, and the purpose for which, the audit report was prepared;
(c) a description of the methodology adopted in preparing the audit report;
(d) the level of compliance with the conditions of the water use licence
(e) findings of audit.
(f) copy of water use licence

ANNEXURE J

NB: Table must be accompanied by a cover letter and motivation

Table 1: Schedule of the proposed amendment to < insert name of the applicant and project >, licence number: <insert licence number>.

No	Amendment type *(Is the amendment in term of section 158 or 50, 51 or 52?)*	Page No and or Annexure No	Title	Condition	Original Clause *(in italics)*	Amendment Proposed	Comments/ Justification	DWS comments (For official use only)	Recommendation on Applicant proposal (For official use only)
1	Section <<xx>>	Page 1	licensee	Name of the licensee	*Department of Water and sanitation*	Department of Water and Sanitation	Company underwent name change due to change of ownership		
2	Section <<xx>>	Page 13 Annexure II	Rehabilitation measures	66	*The Licensee shall ensure that for every 1 ha of the pan that is destroyed, 3 ha must be rehabilitated*	Condition should be deleted	No pans within mining area		