DRAFT BASIC ASSESSMENT

The proposed dredging at a Weir near De Put Dam, Senekal, Free State

Applicant: Setsoto Local Municipality
MDA Ref No: 40884
Date: January 2022

Town & Regional Planners,
Environmental & Development
Consultants

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destea
department of
economic, small business development,
tourism and environmental affairs
FREE STATE PROVINCE

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 as amended and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **07 April 2017**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?		NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

The proposed project entails the proposed dredging of material at a weir near the De Put Dam, Senekal. The dredged material will be removed from the site.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 327,325 and 324	Description of project activity
Example: ***GN 327 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.***	***A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river***
Regulation 983, Listing Notice 1 (BAR), Activity 19: The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from (i) a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving— (a) will occur behind a development setback;	The proposed project entails the dredging of material at a weir near the De Put Dam, Senekal.

(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies. "watercourse" means (a) a river or spring; (b) a natural channel in which water flows regularly or intermittently; (c) a wetland, pan, lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and a reference to a watercourse includes, where relevant, its bed and banks	
Regulation 983, Listing Notice 1 (BAR), Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for – (i) The undertaking of a linear	Removed soil may contain indigenous vegetation.

activity; or (ii) Maintenance purposes undertaken in accordance with a maintenance management plan.	

2. FEASIBLE AND REASONABLE ALTERNATIVES

"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 proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h) of GN 326, Regulation 2014 as amended. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The dredging of a weir near the De Put Dam, Senekal The proposed project entails the dredging at an	28°21'28.42"S 28°21'28.12"S 28°21'33.77"S 28°21'34.64"S	27°37'15.86"E 27°37'17.68"E 27°37'23.97"E 27°37'22.34"E

existing weir near the De Put Dam, Senekal.		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		

In the case of linear activities:

NOT APPLICABLE

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The dredging of a weir near the De Put Dam, Senekal The proposed project entails the dredging at an existing weir near the De Put Dam, Senekal. The dredged soil will be removed from site and be used by the applicant on property owned by the applicant.	28°21'28.42"S 28°21'28.12"S 28°21'33.77"S 28°21'34.64"S	27°37'15.86"E 27°37'17.68"E 27°37'23.97"E 27°37'22.34"E

Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		

c) Technology alternatives

Alternative 1 (preferred alternative)
The dredging of a weir near the De Put Dam, Senekal The proposed project entails the dredging at an existing weir near the De Put Dam, Senekal. The dredged soil will be removed from site and be used by the applicant on property owned by the applicant.
Alternative 2
N/A
Alternative 3
N/A

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)		
The dredging of a weir near the De Put Dam, Senekal The proposed project entails the dredging at an existing weir near the De Put Dam, Senekal. The dredged soil will be removed from site and be used by the applicant on property owned by the applicant.	28°21'28.42"S 28°21'28.12"S 28°21'33.77"S 28°21'34.64"S	27°37'15.86"E 27°37'17.68"E 27°37'23.97"E 27°37'22.34"E
Alternative 2		
As an alternative, the construction of a new weir in close proximity to the existing weir can be constructed. However, this option is costly and unnecessary. Therefore, this option is not seen as a feasible and / or reasonable alternative and will not be discussed further in this report.		
Alternative 3		
N/A		

e) No-go alternative

Not to remove the sludge material from the weir-area.

This will reduce the functionality of the weir and will lead to malfunctioning of the Senekal Bulk Water Supply System.

Therefore, the no-go option is not seen as a feasible and / or reasonable alternative.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	10 750 m^2
Alternative A2 (if any)	N/A
Alternative A3 (if any)	N/A

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	N/A
Alternative A2 (if any)	N/A
Alternative A3 (if any)	N/A

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	800 DUM
Alternative A2 (if any)	N/A
Alternative A3 (if any)	N/A

4. SITE ACCESS

Does ready access to the site exist?	YES	
If NO, what is the distance over which a new access road will be built		m

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

Describe the type of access road planned:

The existing dirt road will be used to gain access to the site. The said road will be maintained by the applicant / contractor during the proposed dredging activities.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES		
The proposed project entails the dredging of an existing weir.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		
The proposed project entails the dredging of an existing weir. The said activities are required for the optimal operation of the weir.			
(b) Urban edge / Edge of Built environment for the area	YES		
The proposed project entails the dredging of an existing weir.			

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES		
The applicant of the proposed project is the Local Municipality itself. Therefore the proposed project will be in line with the Municipal Plans for the said area.			
(d) Approved Structure Plan of the Municipality	YES		
The applicant of the proposed project is the Local Municipality itself. Therefore the proposed project will be in line with the Municipal Plans for the said area.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES		
The applicant of the proposed project is the Local Municipality itself. Therefore, the proposed project will follow the integrity of the existing environmental management priorities for the area.			
(f) Any other Plans (e.g. Guide Plan)			N/A
N/A			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES		
The proposed project is in line with the projects and programmes identified as priorities by the Local Municipality.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES		
The dredging of the weir is essential for the proper operation of the weir. The weir should operate optimally as it forms part of the infrastructure that is used to provide Senekal with potable water.			

5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES		
Adequate services are in place. Note that the applicant of the proposed project is the local municipality itself; therefore it is believed that no written confirmation is required from the municipality regarding the above.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES		
The applicant is the local municipality itself.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES		
The project forms part of the Bulk Water Supply Scheme for the town of Senekal			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES		
The proposed project entails the dredging of an existing weir in order to ensure that the weir functions optimally.			
9. Is the development the best practicable environmental option for this land/site?	YES		
The applicable engineers and specialists examined the site and concluded that the site is suitable and indeed the best environmental option.			

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES		
Negative: • Vegetation loss; • Possible erosion; • Possible water, soil and groundwater pollution. These can be mitigated by implementing the mitigation measures in the EMPr, as well as good practices. **Positive:** • Employment opportunities; • Removal of various alien vegetation species; • Optimal operation of the existing weir, and therefore the availability of sufficient volume of potable water in Senekal Thus, the positive impacts outweigh the negative impacts.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES		
It is suggested that future, similar projects will also: Examine the dredging / rehabilitation of an existing weir rather than the construction of a new weir Re-use the removed soil for rehabilitation / filling of quarries / landfill sites.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES		
Noise levels may be high during the construction phase. The construction phase will also lead to the formation of nuisance dust. However, this will be limited via dust suppression activities (when required). In addition, construction activities will be limited to normal working hours, where possible. Noise levels will have to comply with the requirements as set out in the OSH Act.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES		
The proposed project will not have an impact on the urban edge as defined by the Local Municipality.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES		
SIP 18: Water and sanitation infrastructure. The proposed project entails the dredging of an existing weir in Senekal. This will enable the weir to operate sufficiently.			

15. What will the benefits be to society in general and to the local communities?	Please explain
• Employment opportunities • Availability of potable water	
16. Any other need and desirability considerations related to the proposed activity?	Please explain
N/A	
17. How does the project fit into the National Development Plan for 2030?	Please explain
N/A	

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

Section 23 of NEMA (Act 107, 27 November 1998) reads as follows:
'23. (1) The purpose of this Chapter is to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities,
(2) The general objective of integrated environmental management is to -
(a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment:
(b) identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management set out in section 2;
(c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;
(d) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;
(e) ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and
(f) identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.

(3) The Director-General must coordinate the activities of organs of state referred to in section 24(1) and assist them in giving effect to the objectives of

this section and such assistance may include training, the publication of manuals and guidelines and the co-ordination of procedures.'
With the above in mind, the following objectives were taken into consideration:

1. An application for environmental authorisation was submitted to the Department.
2. Integration of various principles of environmental management were implemented in order to make decisions regarding the significant effect of the proposed project on the environment
3. Identified, predicted and evaluated the actual potential impact of the proposed project on the environment, the socio-economic conditions and heritage, as well as the consequences and alternatives and options for mitigation of activities. This was done to minimize the possible negative impacts on the environment and maximizing benefits to mankind.
4. Taken the effects of activities on the environment into consideration before actions are to be taken in connection with them.
5. A public participation process was followed.
6. Considered the environmental attributes in management and decision-making with reference to the environment.
7. Mitigation and management activities best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management were investigated.
8. The report follows the laws to identify, predict and evaluate the actual and potential impacts associated with the development.
9. Specialists investigated the site to determine baseline and to predict the impacts associated with the proposed project. The preferred alternative has been identified as the one that will have the least negative impact on the environment, as sensitive areas will be avoided as far as possible. In addition, already disturbed areas will be utilized as far as possible.
10. A public participation process was followed. Consideration of the 2014 EIA Regulations has been applied in this regards.
11. An EMPr is included, with mitigation measures that should be implemented during the planning, construction, operation and possible decommissioning of the proposed project. These mitigation measures are in line with the environmental requirements and Best Practise Principles.
12. Relevant guidelines and procedures were used to produce this document. Therefore, relevant information is reflected, for sufficient co-governance to be implemented.
13. The proposed project provides for the needs of the applicant while ensure compliance with environmental management principles.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

Section 2 of NEMA (Act 107, 27 November 1998) reads as follows:
(1) The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and—
(a) shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;
(b) serve as the general framework within which environmental management and implementation plans must be formulated:
(c) serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;
(d) serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and
(e) guide the interpretation, administration and implementation of this Act, and any other law concerned with the protection or management of the environment.
(2) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
(3) Development must be socially, environmentally and economically sustainable.
(4) *(a)* Sustainable development requires the consideration of all relevant factors including the following:
(i) That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied:
(ii) into account the limits of current knowledge about the consequences of decisions and actions; and
(iii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.
(iv) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
(v) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;

(vi) that waste is avoided. or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;

(vii) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;

viii) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;

(ix) that a risk-averse and cautious approach is applied, which takes

(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

(c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

(d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

(e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

(f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

(g) Decisions must take into account the interest, needs and values of all the interested and affected parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge.

(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

(i) The social, economic and environmental impacts of activities, including disadvantages and benefits must be considered, assessed and evaluated and decisions must be appropriate in the light of such consideration and assessment.

j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.

(k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.
(l) There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.
(m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.
(n) Global and international responsibilities relating to the environment must be discharged in the national interest.
(o) The environment is held in public trust for the people. The beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.
(p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.
(q) The vital role of women and youth in environment management and development must be recognised and their full participation therein must be promoted.
(r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.
The applicant of the proposed project took the following into consideration:
1. That the disturbance of ecosystems and loss of biological diversity are minimised and remedied by implementing the mitigation measures in this document, the EMPr as well as best practices.
2. Environmental management must be integrated
3. Adverse environmental impacts (if any) shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.
4. The participation of all interested and affected parties in environmental governance must be promoted by means of the public participation process that forms part of the basic assessment process.
5. Community wellbeing and empowerment must be promoted by providing employment opportunities during the construction as well as operational phase.
6. The right of workers to refuse work that is harmful to human health or the environment

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 1998 (Act 107 of 1998)	Proposed dredging at a weir	DESTEA	1998
National Heritage Resources Act (Act No 25 of 1999)	Proposed dredging at a weir	SAHRA	1999
National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004)	Proposed dredging at a weir	DESTEA	2004
Environmental Conservation Act (Act 73 of 1989)	Conservation of the environment, by implementing best practices	DEA / DESTEA	1989
National Environmental Management Biodiversity Act, 2004 (Act 10 0f 2004)	Endangered / Vulnerable vegetation types and Protected Species (TOPS)	DEA / DESTEA	2004
Northern Cape Nature Conservation Act (Act 9 of 2009)(NCNCA)	Conservation of the environment, by implementing best practices	DEA / DESTEA	2009
National Forests Act (Act No. 84 of 1998) (NFA)	Conservation of protected trees (if any)	DAFF	1998
National Veld and Forest Fires Act, Act 101 of 1998 (NVFFA)	Mitigation measures to be implemented in case of a fire	DAFF	1998
NEM Laws Amendment Act Department (Act 25 of 2014)	Amended regulations for the Public Participation Process	DEA / DESTEA	2014
National Water Act, 1998 (Act 36 of 1998)	Activities within 32m of a watercourse	DWS	1998

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES
If YES, what estimated quantity will be produced per month?	Unknown m^3

How will the construction solid waste be disposed of (describe)?

The contractor will be responsible for the disposal of waste generated during the construction phase. The contractor will remove the construction waste and dispose thereof at a suitable authorized landfill site.

Note that the removed soil will be used by the applicant (landowner) for the rehabilitation / levelling of specific areas on property belonging to the applicant.

Where will the construction solid waste be disposed of (describe)?

Solid waste disposal sites in Senekal. Hazardous waste (if any) should be disposed of at a suitable authorized hazardous landfill site such as Holfontein.

Will the activity produce solid waste during its operational phase?	NO
If YES, what estimated quantity will be produced per month?	m^3

How will the solid waste be disposed of (describe)?

It is not anticipated that the proposed project will generate solid waste during the operational phase.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

It is not anticipated that the proposed project will generate solid waste during the operational phase.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

It is not anticipated that the proposed project will generate solid waste during the operational phase.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	NO

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?		NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?		NO
If YES, what estimated quantity will be produced per month?		m^3
Will the activity produce any effluent that will be treated and/or disposed of on site?		NO

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?		NO

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		**Cell:**	
E-mail:		**Fax:**	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?		NO
If YES, is it controlled by any legislation of any sphere of government?		NO

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?		NO

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	YES	
If YES, is it controlled by any legislation of any sphere of government?	YES	

Describe the noise in terms of type and level:

- Noise associated with the development activities will be from general vehicular activities as well as construction activities including blasting, when required.
- Heavy vehicles will be equipped with silencers.
- A blasting permit will be obtained before blasting activities is undertaken.
- The adjacent landowners will be notified of proposed blasting 24 hours prior to blasting activities.
- In addition, construction activities will be limited to day time hours, where possible.
- Noise levels will have to comply with the requirements as set out in the OHS Act.

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	~~Water board~~	~~Groundwater~~	River, stream, dam or lake	~~Other~~	~~The activity will not use water~~

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	Unknown Litres
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

NOTE:

Construction activities will be undertaken within a watercourse. An application will be submitted to DWS in due time.

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

The following were considered by the applicant:

- Minimum efficiencies permitted on electrical equipment
- Energy optimisation of equipment
- Energy efficient temporarily lightning (if required, during the construction phase)

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): [ ]

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? YES [ ]

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Free State
District Municipality	Thabo Mofutsanyana District Municipality
Local Municipality	Setsoto Local Municipality
Ward Number(s)	3, 4
Farm name and number	De Put RE/298
Portion number	Remainder
SG Code	F 030 000 000 000 298 000 00
Farm name and number	Portion 5 of the farm Veepost 1172
Portion number	Portion 5
SG Code	F 030 000 000 001 172 000 05

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Municipal

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? [ ] NO

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative 1Preferred:

Flat	~~1:50 – 1:20~~	~~1:20 – 1:15~~	~~1:15 – 1:10~~	~~1:10 – 1:7,5~~	~~1:7,5 – 1:5~~	~~Steeper than 1:5~~

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

~~2.1 Ridgeline~~		~~2.4 Closed valley~~		~~2.7 Undulating plain / low hills~~	
~~2.2 Plateau~~		2.5 Open valley		~~2.8 Dune~~	
~~2.3 Side slope of hill/mountain~~		~~2.6 Plain~~		~~2.9 Seafront~~	
2.10 At sea					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:	
Shallow water table (less than 1.5m deep)	YES	
Dolomite, sinkhole or doline areas		NO
Seasonally wet soils (often close to water bodies)	YES	
Unstable rocky slopes or steep slopes with loose soil		NO
Dispersive soils (soils that dissolve in water)	YES	
Soils with high clay content (clay fraction more than 40%)	YES	
Any other unstable soil or geological feature		NO (clay already mentioned above)
An area sensitive to erosion	YES	

NOTE:

1. A borehole was drilled to the immediate west of the existing De Put abstraction pump station building. The upper 1.0m of the soil profile at this

position comprises a soft to firm, silty CLAY material expected to be HIGH in potential expansiveness. The remainder of the soil profile up to a depth of 5.4m comprises a clayey SILT material expected to be MEDIUM in potential expansiveness. Based on the borehole drilled at this positions, 'soft' excavation conditions must be expected to a depth of at least 5.4m below current ground level ('Soft' excavation conditions as used here implying readily excavatable by hand, TLB or tracked excavator up to say 20 ton without the need for extensive ripping, hammering of blasting operations). Deep excavations into the soft to very stiff clayey SILT material will, in conjunction with the expected shallow groundwater level, be inherently unstable. Deep excavations will require a combination of de-watering, battering of excavation sidewalls and/or a mechanically applied lateral support system (such as soil nails / rock bolts and/or steel mesh reinforced shotcrete).

2. An additional borehole was drilled as close as possible to the existing booster pump station site to the immediate north of the De Put off-channel storage dam. The upper 2.0m of the soil profile at this position comprises a soft to firm, sandy CLAY material expected to be HIGH in potential expansiveness. The remainder of the soil profile up to a depth of approximately 7.5m comprises a stiff, sandy CLAY which is expected to be HIGH in potential expansiveness. Medium hard rock sandstone will be encountered at a depth of around 7.6m. Based on the borehole drilled at this positions, 'soft' excavation conditions must be expected to a depth of at least 7.5m below current ground level ('Soft' excavation conditions as used here implying readily excavatable by hand, TLB or tracked excavator up to say 20 ton without the need for extensive ripping, hammering of blasting operations). Deep excavations into the soft to stiff sandy CLAY material will, in conjunction with the expected shallow groundwater level, be inherently unstable. Deep excavations will require a combination of de-watering, battering of excavation sidewalls and/or a mechanically applied lateral support system (such as soil nails / rock bolts and/or steel mesh reinforced shotcrete).

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

~~Natural veld - good condition[E]~~	Natural veld with scattered aliens[E]	~~Natural veld with heavy alien infestation[E]~~	~~Veld dominated by alien species[E]~~	~~Gardens~~
~~Sport field~~	~~Cultivated land~~	~~Paved surface~~	~~Building or other structure~~	~~Bare soil~~

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

Summary of Ecological Report:

Despite the somewhat modified condition of surrounding natural vegetation it does still consist of Eastern Free State Clay Grassland, a Threatened Ecosystem, which should therefore be avoided by the proposed dredging operations. This is particularly applicable to the western banks and surrounding areas to the west of the river.

Although the area is somewhat modified it was notable that along the banks of the Sandspruit, several specimens of the protected *Crinum bulbispermum* occurs. This species is not common but is normally associated with the floodplain of river systems. Though relatively widespread and not considered rare or endangered it still retains a significant conservation value. The species should remain largely unaffected by the dredging operations as long as the remaining natural vegetation along the western banks of the river is not affected by dredging or associated activities such as a laydown area or stockpiles. Should any specimens require removal for the dredging operations, the necessary permits will have to be obtained to do so. Any removed specimens should be transplanted to an adjacent area where it will remain unaffected.

Soil samples taken across the Sandspruit are indicative of a permanent zone of wetness and it is considered that saturated soil conditions exist year-round. These wetland conditions now occur from the toe of the De Put Dam to the main channel of the Sandspruit and across to the sandstone floodbench on the western banks of the river. Obligate wetland vegetation dominates the river, main channel and entire floodplain adjacent to it. This all confirms the extensive wetland areas associated with it. The terrestrial surroundings or border of the riparian zone is indicated by an exposed sandstone ridge along

the western banks forming a floodbench and the presence of terrestrial plant species.

The off-channel De Put storage dam, abstracts water from the main channel and in so doing decreases the baseflow of the river which alters the flow regime significantly. The weir associated with this dam also act as flow barrier, and although not as significant as an in-channel storage dam, would also cause retardation of flow and obstruct flooding events and would therefore impact on the flow and flooding regime of the river. The weir would also cause sedimentation upstream while preventing sediment deposition downstream. This will also have a significant impact on the river.

The floodplain and wetland areas adjacent to the Sandspruit and weir are currently being affected by construction of a new abstraction point, this has resulted in the clearance of vegetation, disturbance of the soils surface and which clearly contributes to sedimentation of the river at the site as well as downstream of the weir. This also indicates that any disturbance of the river, riparian vegetation and soils surface will result in downstream impacts and should also be taken into consideration for the proposed dredging of the river upstream of the weir.

Several significant impacts has quite significantly affected the river at the site and the bed and bank morphology has also been significantly modified. Despite the modifications affecting the Sandspruit, it is still regarded as a highly sensitive system providing numerous vital ecosystem functions including water transportation, aquatic and wetland habitat, flood attenuation and bioremediation functions.

The Sandspruit which will be affected by the dredging operations is still natural to a significant extent although moderately modified by large impacts associated with the De Put Dam and weir and upstream dryland crop cultivation. An Index of Habitat Integrity (IHI) was conducted and indicated that the river has an Instream and Riparian IHI of Category C: Moderately Modified. The EI&S of the Sandspruit has been rated as being Moderate.

A Risk Assessment for the proposed dredging operations within the Sandspruit has been undertaken according to the Department of Water & Sanitation's requirements for risk assessment and the provisional Risk Assessment Matrix for Section 21(c) & (i) water use. Despite the modified condition of the river, it is still likely that dredging will cause several significant impacts. The existing weir and abstraction point clearly has significantly modified the river here and the continuous sediment deposition upstream of the weir is clearly resulting in the modification of the river, especially in terms of the geomorphology and

riparian composition. The proposed dredging operations may therefore be considered as a form of river rehabilitation. This proposed rehabilitation may however still result in significant impacts and in order to obtain a better understanding of what these may entail the following guideline was consulted:
Day, L., King, H. & Rountree, M. 2016. The Development of a Comprehensive Manual for River Rehabilitation in South Africa. WRC Report TT 646/15.

Sediment erosion, transport and deposition are important processes that create habitat diversity in rivers. However, where high rates of deposition occur, as is the case upstream of the weir, this results in reduced channel depth. In general, the direct removal or excavation of sediment form rivers is not a good idea due to the risks of initiating instability and the loss and degradation of riparian and wetland habitats. However, in some instances the management of sedimentation is not possible without the direct removal of sediments. Where the direct removal of sediment is found to be justified, best practise must be used to carry out the necessary work to minimise adverse effects on the environment (Day *et al* 2016).

Comprehensive mitigation should be implemented in order to decrease the impact that dredging operations will have on the Sandpsuit.

Taking into consideration all of the above and provided that adequate mitigation as recommended is implemented at the site, the proposed dredging operations should be limited to a moderate risk activity.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES		
Non-Perennial River		NO	
Permanent Wetland	YES		
Seasonal Wetland		NO	
Artificial Wetland		NO	
Estuarine / Lagoonal wetland		NO	

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

The proposed dredging will occur at a weir located within the Sand Spruit.

Soil samples taken across the Sandspruit are indicative of a permanent zone of wetness and it is considered that saturated soil conditions exists year-round. These wetland conditions now occur from the toe of the De Put Dam to the main channel of the Sandspruit and across to the sandstone floodbench on the western banks of the river. Obligate wetland vegetation dominates the river, main channel and entire floodplain adjacent to it. This all confirms the extensive wetland areas associated with it. The terrestrial surroundings or border of the riparian zone is indicated by an exposed sandstone ridge along the western banks forming a floodbench and the presence of terrestrial plant species.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

~~Natural area~~	Dam or reservoir	~~Polo fields~~
~~Low density residential~~	~~Hospital/medical centre~~	~~Filling station~~ [H]
~~Medium density residential~~	~~School~~	~~Landfill or waste treatment site~~
~~High density residential~~	~~Tertiary education facility~~	~~Plantation~~
~~Informal residential~~[A]	~~Church~~	Agriculture
~~Retail commercial & warehousing~~	~~Old age home~~	River, stream or wetland
~~Light industrial~~	~~Sewage treatment plant~~[A]	~~Nature conservation area~~
~~Medium industrial~~ [AN]	~~Train station or shunting yard~~ [N]	Mountain, koppie or ridge
~~Heavy industrial~~ [AN]	~~Railway line~~ [N]	~~Museum~~
~~Power station~~	~~Major road (4 lanes or more)~~ [N]	~~Historical building~~
~~Office/consulting room~~	~~Airport~~ [N]	~~Protected Area~~
~~Military or police base/station/compound~~	~~Harbour~~	~~Graveyard~~
~~Spoil heap or slimes dam~~[A]	~~Sport facilities~~	~~Archaeological site~~
~~Quarry, sand or borrow pit~~	~~Golf course~~	~~Other land uses (describe)~~

NOTE:
The concrete weir and an accompanying berm was constructed in the 1970's as part of the De Put Water Scheme for water retention in the Sand Spruit in order to alleviate an acute water shortage in town

If any of the boxes marked with an "[N] "are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO Within the Ecological Support Area 2; Vulnerable Ecosystem
Core area of a protected area?		NO
Buffer area of a protected area?		NO
Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:		NO

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

Will any building or structure older than 60 years be affected in any way?	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

NOTE:

According to Census 2011, Setsoto Local Municipality has a population of 110 335, of whom 92,3% are black African, 5,7% are white, with the remaining 2% made up by other population groups. The majority of the population, that is 62%, is between 15 and 64 years of age. The age group 0 to 14 years accounts for 32% of the population. Of those aged 20 years and above, approximately 8,7% have no formal schooling, 22,6% have completed matric, and 6,9% have some form of higher education.
According to Census 2011, the town Senekal has a total population of 3 466 people, of whom 53,0% are black African, 1.4% are coloured, 42.8% are white and 1.7% are Indian/Asian. The other population groups make up the remaining percentages.

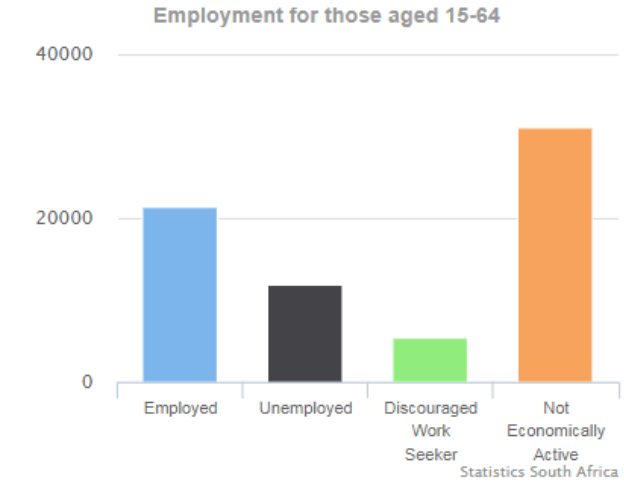
The population estimates for Senekal-Matwabeng as calculated by DWS are provided below. The proposed project will service an estimated 41 324 community members in the year 2045.

* 2001 – 22 551
* 2011 – 25 543
* 2015 – 29 464
* 2020 – 31 173
* 2045 – 41 324

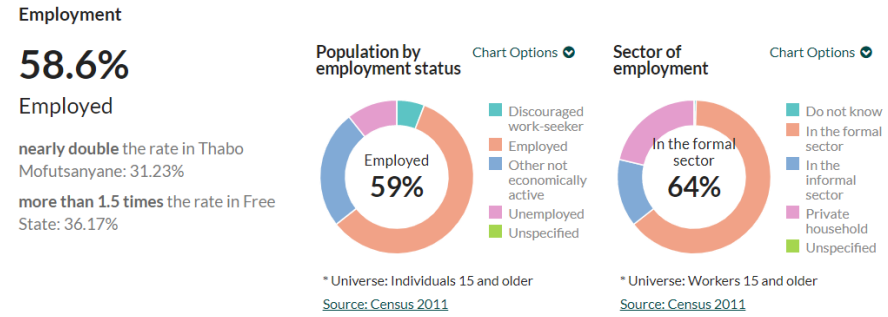
The following information was obtained from:
http://www.statssa.gov.za &
https://wazimap.co.za/profiles/ward-41901003-setsoto-ward-3-41901003

Level of unemployment:

Setsoto Local Municipality:

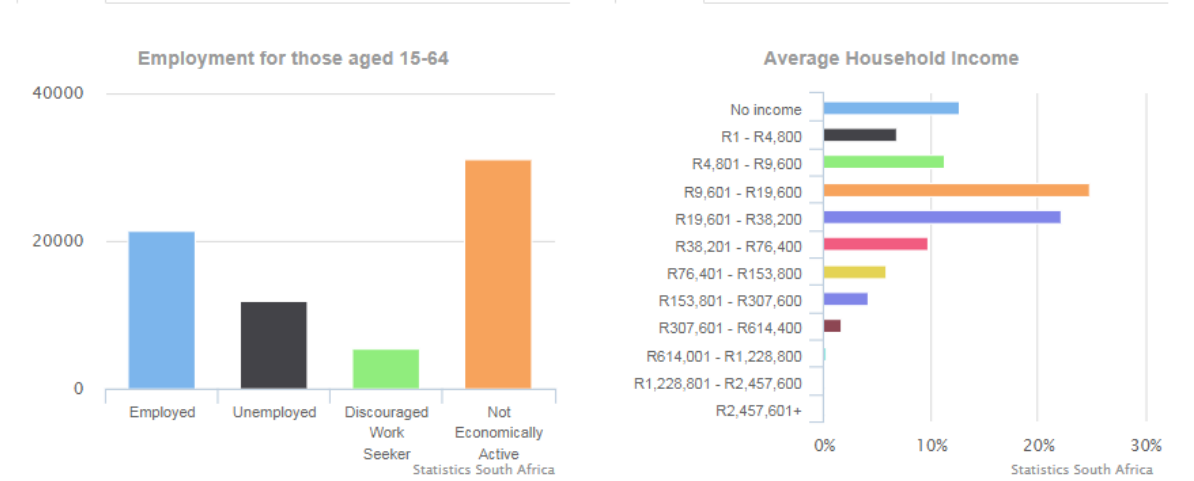


Ward 3:

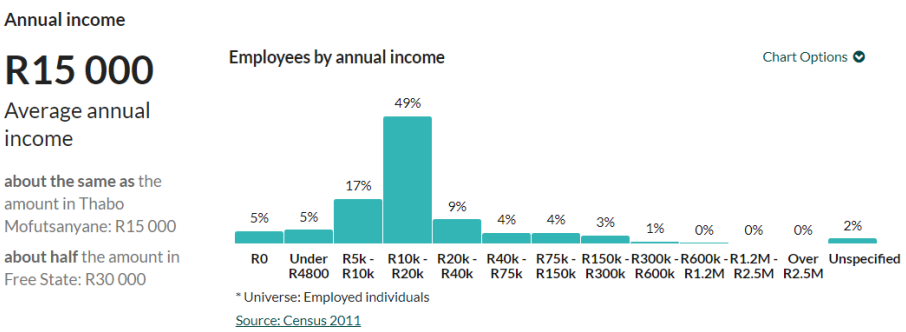


Economic profile of local municipality:

Setsoto Local Municipality:

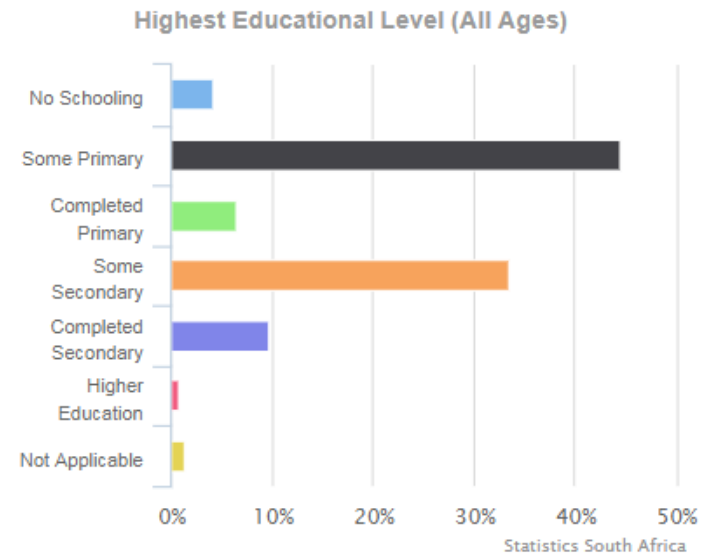


Ward 3:

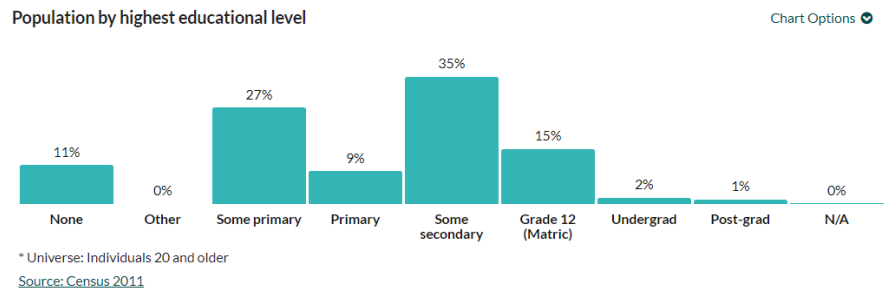


Level of education:

Setsoto Local Municipality:



Ward 3:



b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Unknown

What is the expected yearly income that will be generated by or as a result of the activity?	Unknown	
Will the activity contribute to service infrastructure?	YES	
Is the activity a public amenity?	YES	
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown	
What is the expected value of the employment opportunities during the development and construction phase?	Unknown	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown	
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown	
What is the expected current value of the employment opportunities during the first 10 years?	Unknown	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown	

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan

Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	According to the Screening Report, the sensitivity of the proposed development area can be described as being Very Sensitive, as it is located within the Ecological Support Area 2. Please refer to the Ecological Report for more information.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	100%	Despite the somewhat modified condition of surrounding natural vegetation it does still consist of Eastern Free State Clay Grassland, a Threatened Ecosystem, which should therefore be avoided by the proposed dredging operations. This is particularly applicable to the western banks and surrounding areas to the west of the river. Although the area is somewhat modified it was notable that along the banks of the Sandspruit, several specimens of the protected *Crinum bulbispermum* occurs. This species is not common but is normally associated with the floodplain of river systems. Though relatively widespread and not considered rare or endangered it still retains a significant conservation value. The species should remain largely unaffected by the dredging operations as long as the

		remaining natural vegetation along the western banks of the river is not affected by dredging or associated activities such as a laydown area or stockpiles. Should any specimens require removal for the dredging operations, the necessary permits will have to be obtained to do so. Any removed specimens should be transplanted to an adjacent area where it will remain unaffected. Soil samples taken across the Sandspruit are indicative of a permanent zone of wetness and it is considered that saturated soil conditions exist year-round. These wetland conditions now occur from the toe of the De Put Dam to the main channel of the Sandspruit and across to the sandstone floodbench on the western banks of the river. Obligate wetland vegetation dominates the river, main channel and entire floodplain adjacent to it. This all confirms the extensive wetland areas associated with it. The terrestrial surroundings or border of the riparian zone is indicated by an exposed sandstone ridge along the western banks forming a floodbench and the presence of terrestrial plant species. The off-channel De Put storage dam, abstracts water from the main channel and in so doing decreases the baseflow of the river which alters the flow regime significantly. The weir associated with this dam also act as flow barrier, and although not as significant as an in-channel storage dam, would also cause retardation of flow and obstruct flooding events and would therefore impact on the flow and flooding regime of the river. The weir would also cause sedimentation upstream while preventing sediment deposition downstream. This will also have a significant

		impact on the river. The floodplain and wetland areas adjacent to the Sandspruit and weir are currently being affected by construction of a new abstraction point, this has resulted in the clearance of vegetation, disturbance of the soils surface and which clearly contributes to sedimentation of the river at the site as well as downstream of the weir. This also indicates that any disturbance of the river, riparian vegetation and soils surface will result in downstream impacts and should also be taken into consideration for the proposed dredging of the river upstream of the weir. Several significant impacts has quite significantly affected the river at the site and the bed and bank morphology has also been significantly modified. Despite the modifications affecting the Sandspruit, it is still regarded as a highly sensitive system providing numerous vital ecosystem functions including water transportation, aquatic and wetland habitat, flood attenuation and bioremediation functions.
Degraded (includes areas heavily invaded by alien plants)	%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	%	

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		**Aquatic Ecosystems**		
Ecosystem threat status as per the	Critical Endangered	Wetland (including rivers, depressions, channelled and	Estuary	Coastline

Terrestrial Ecosystems		Aquatic Ecosystems						
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Vulnerable Despite the somewhat modified condition of surrounding natural vegetation it does still consist of Eastern Free State Clay Grassland, a Threatened Ecosystem, which should therefore be avoided by the proposed dredging operations. This is particularly applicable to the western banks and surrounding areas to the west of the river.	unchanneled wetlands, flats, seeps pans, and artificial wetlands)						
	Least Threatened	YES				NO		NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

Despite the somewhat modified condition of surrounding natural vegetation it does still consist of Eastern Free State Clay Grassland, a Threatened Ecosystem, which should therefore be avoided by the proposed dredging operations. This is particularly applicable to the western banks and surrounding areas to the west of the river.

Although the area is somewhat modified it was notable that along the banks of the Sandspruit, several specimens of the protected *Crinum bulbispermum* occurs. This species is not common but is normally associated with the floodplain of river systems. Though relatively widespread and not considered rare or endangered it still retains a significant conservation value. The species should remain largely unaffected by the dredging operations as long as the remaining natural vegetation along the western banks of the river is not affected by dredging or associated activities such as a laydown area or stockpiles. Should any specimens require removal for the dredging operations, the necessary permits will have to be obtained to do so. Any removed specimens should be transplanted to an adjacent area where it will remain unaffected.

Soil samples taken across the Sandspruit are indicative of a permanent zone of wetness and it is considered that saturated soil conditions exist year-round. These wetland conditions now occur from the toe of the De Put Dam to the main channel of the Sandspruit and across to the sandstone floodbench on the western banks of the river. Obligate wetland vegetation dominates the river, main channel and entire floodplain adjacent to it. This all confirms the extensive wetland areas associated with it. The terrestrial surroundings or border of the riparian zone is indicated by an exposed sandstone ridge along the western banks forming a floodbench and the presence of terrestrial plant species.

The off-channel De Put storage dam, abstracts water from the main channel and in so doing decreases the baseflow of the river which alters the flow regime significantly. The weir associated with this dam also act as flow barrier, and although not as significant as an in-channel storage dam, would also cause retardation of flow and obstruct flooding events and would therefore impact on the flow and flooding regime of the river. The weir would also cause sedimentation upstream while preventing sediment deposition downstream. This will also have a significant impact on the river.

The floodplain and wetland areas adjacent to the Sandspruit and weir are currently being affected by construction of a new abstraction point, this has resulted in the clearance of vegetation, disturbance of the soils surface and which clearly contributes to sedimentation of the river at the site as well as downstream of the weir. This also indicates that any disturbance of the river, riparian vegetation and soils surface will result in downstream impacts and should also be taken into consideration for the proposed dredging of the river upstream of the weir.

Several significant impacts has quite significantly affected the river at the site and the bed and bank morphology has also been significantly modified. Despite the modifications affecting the Sandspruit, it is still regarded as a highly sensitive system providing numerous vital ecosystem functions including water transportation, aquatic and wetland habitat, flood attenuation and bioremediation functions.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Vrystaat Kroon	
Date published	17 March 2021	
Site notice position	**Latitude**	**Longitude**
	28°19'35.74"S	27°37'30.96"E
Date placed	11 March 2021	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 326

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 326

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Thabo Mofutsanyana District Municipality	The Municipal Manager	Ms. Takatso Lebenya Tel: (058) 718 1036 / 1089 Fax: (058) 718 1034 Email: takatso@tmdm.gov.za Private Bag X810, Witsieshoek, 9870 1 Mampoi Street, Old Parliament Building, Phuthaditjhaba
Setsoto Local Municipality	Municipal Manager	Mr. Tshepiso "Sugar" Ramakarane Fax: (+27 51) 933 9363 Email: tshepiso@setsoto.co.za and manager@setsoto.co.zaTel: (+27 51) 933 9302 27 Voortrekker Street, Ficksburg PO Box 116, Ficksburg, 9730
Setsoto Local Municipality:	Ward 3: Cllr. Mamotena Lydia	27 Voortrekker Street, Ficksburg

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Ward Councillors: Wards 3 & 6	Mthimkulu Ward 6: Cllr.Motsamai Selasi	PO Box 116, Ficksburg, 9730
Head of Department: Agriculture	The Assistant Director	P.O. Box 34521 Faunasig Bloemfontein 9325
Department of Public Works: Property Manager	Ms Agnes Ntilane (Strategic Asset Management – Property Portfolio)	Provincial Government of the Free State Department of Land Affairs Director Property Management of the Provincial Department of Public Works & Infrastructure Ms Agnes Ntilane 136 Charlotte Mareka Street Bloemfontein 9300 Ntilanea@fsworks.gov.za
Department of Water and Sanitation	Mr. W Grobler	Private Bag X528 Bloemfontein 9300 GroblerW@dws.gov.za
SAHRA		South African Heritage Resources Agency (SAHRA) Head Office 111 Harrington Street CAPE TOWN 8001
SAHRA Free State	Heritage Coordinator	Ntando PZ Mbatha Corner Henry and East Burger Street Department of Sport Arts Culture and Recreation Office 204 Bloemfontein 9301
SANRAL	Statutory Control: Eastern Region	Statutory Control: Eastern Region 58 Van Eck Place Mkondeni Pietermaritzsburg

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
		3201
ESKOM	Land and Rights Officer Environmental Officer	Phindi Rapudungoane Land and Rights Officer Tell: 051 4042284 Fax: 086 5398399 Phindi.Rapudungoane@eskom.co.za Mahlatse Moeng Environmental Officer Land Development and Environment Eskom Distribution-FSOU Eskom Centre First Floor 120 Henry Street Westdene Bloemfontein Tel: 051 404 2287 Cell: 079 199 0679 Fax: 086 604 5709 Email: Mahlatse.Moeng@eskom.co.za

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No comments received to date	No response to date, as no comments were received.

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/ Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Thabo Mofutsanyana District Municipality	The Municipal Manager Ms. Takatso Lebenya	(058) 718 1036 / 1089	(058) 718 1034	takatso@tmdm.gov.za	Private Bag X810, Witsieshoek, 9870
Setsoto Local Municipality: Municipal Manager	Municipal Manager Mr. Tshepiso "Sugar" Ramakarane	(051) 933 9302	(051) 933 9363	tshepiso@setsoto.co.za and manager@setsoto.co.za	PO Box 116, Ficksburg, 9730
Setsoto Local Municipality: Ward Councillor: Ward 3, 6	Ward 3: Cllr. Mamotena Lydia Mthimkulu Ward 6: Cllr.Motsamai Selasi	(051) 933 9302	(051) 933 9363		PO Box 116, Ficksburg, 9730
Head of Department: Agriculture	The Assistant Director				P.O. Box 34521 Faunasig Bloemfontein 9325

Authority/ Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Department of Public Works: Property Manager	Ms Agnes Ntilane (Strategic Asset Management – Property Portfolio)				
Department of Water and Sanitation	Mr Grobler				Private Bag X528 Bloemfontein 9300
SAHRA	South African Heritage Resources Agency (SAHRA) Head Office				111 Harrington Street CAPE TOWN 8001
SAHRA Free State	Heritage Coordinator Ntando PZ Mbatha				Corner Henry and East Burger Street Department of Sport Arts Culture and Recreation Office 204 Bloemfontein 9301
ESKOM	Land and Rights Officer And Environmental Officer	051 404 2287	086 604 5709	Phindi.Rapudungoane@eskom.co.za Mahlatse.Moeng@e	Eskom Distribution-FSOU Eskom Centre First Floor 120 Henry Street

Authority/ Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
				skom.co.za	Westdene Bloemfontein 9300

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Compliance and Monitoring			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Record keeping of compliance and monitoring reports	**Direct impacts:** • Non-conformance	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	• The applicant will ensure that the contractors adhere to the recommendations of the EMPr and conditions of the Environmental Authorisation during construction. • An Environmental Control Officer (ECO) will be appointed to monitor the construction phase. Note that the ECO may be appointed separately or can be part of the contractor's team. • Regular monitoring and / or spot inspections at least every fortnight during the construction phase is recommended. • Inspections should be documented and any shortcomings addressed immediately. • A report will be provided by the independent ECO to the contractor upon completion thereof. The findings thereof should be made available to the competent authority (for example DESTEA, DWS), should it be requested. • Any emergency or unforeseen impact will be reported to the relevant environmental department within 24 hours after identification for telephonic approval and
	Indirect impacts: • Non-conformance	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Non-conformance	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	

Compliance and Monitoring			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			will be confirmed in writing. • During the operational phase, infrastructure must be routinely audited and maintenance schedule adjusted accordingly. • Material Safety Data Sheets (MSDS) should be available on site. Where possible and available, MSDS should include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes. • Procedures in the MSDS should be implemented in case of an emergency • The following documents should be available on site, and made available to the competent authority on request (if applicable): - Complaints Register - Environmental Incident Register - Disposal Certificates of waste generated as a result of the construction activities. - Environmental Monitoring (Audit) Reports - Written Corrective Action Instructions - Environmental Authorisation - DWS Authorisation

Compliance and Monitoring			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			- Blasting Permit - EMPr

Planning and Design phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Planning and design **NOTE:** Should the following aspects not be taken into consideration during the Planning and Design Phase, the environmental impacts associated with the construction and operation phase will be of high significance as the environment will be negatively affected.	**Direct impacts:** • None	**Without Mitigation:** Medium - High Negative **With Mitigation:** Low Negative	• No environmental mitigation measures are to be implemented on site during the planning phase. • However, the applicant, engineers, environmental consultants and specialists should take the following steps during the planning phase: - Permits will be obtained for the removal / transplantation of protected species (if any) that are located within the construction area where no alternatives are possible. - A monitoring system should be implemented to determine the occurrence (if any) of any fuel / oil spillages during the construction phase. - The necessary Environmental Authorisation will be obtained before any activities listed in the Regulations are undertaken. - The necessary precautions with regard to road safety will be implemented for construction work to be undertaken within road crossings (if any). - Proper sanitation, potable water and
	Indirect impacts: • Soil and surface water pollution • Loss of soil • Loss of vegetation	**Without Mitigation:** Medium - High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Groundwater pollution • Loss of vegetation • Negative impact on wetland system	**Without Mitigation:** Medium - High Negative **With Mitigation:** Low Negative	

Planning and Design phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			waste facilities will be in place before construction activities are undertaken. - A blasting permit will be obtained before blasting activities is undertaken (if any). - The design and layout of the proposed project will take the possibility of flooding, erosion and pollution into consideration.

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
General measures to consider	**Direct impacts:** • Loss of vegetation • Loss of animal life • Erosion • Pollution • Noise • Nuisance dust	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	• Any construction is disruptive and the environment must be given consideration with every activity undertaken • All relevant standards relating to legislation should be adhered to (including waste emissions, waste disposal, noise regulations, etc.) • According to Section 28 of the NEMA Act 107, every person who cause, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring and if it can't be avoided or stopped, to minimize and rectify such pollution or degradation of the environment. • The pollution control provision in Section 19(1) of the National Water Act (Act 36 of 1998) should be adhered to at all times. • ECO should be provided with a layout of the site, indicating the position of the following prior to the site establishment, for acceptance:
	Indirect impacts: • Possible outbreaks of fire • Pollution (groundwater, surface water, soil and air) • Erosion • Loss of biodiversity (vegetation & animal life) • Nuisance dust	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Possible outbreaks of fire • Pollution (groundwater, surface water, soil and air)	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	• Erosion • Loss of biodiversity (vegetation & animal life)		- Ablution Facilities - Storage Areas - Ready-mix Areas (if any) - Stockpile Areas - Waste Disposal Facilities - Hazardous Substances Storage Area - Etc. • Designate the boundaries of the active construction start-up site, by erecting fencing / danger tape (where applicable) • Fence off operational footprint area (if possible) to ensure all operational activities are contained within the designate area. • All construction and operational activities must be contained within the demarcated servitude determined in consultation with the ECO. • Care will be taken to prevent unnecessary damage to vegetation near to construction activities. • The necessary precautions with regard to road safety will be implemented for construction work within road crossings (if any). • Proper sanitation, water and waste

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			facilities will be in place for construction workers throughout the construction phase. • Chemical toilets will be cleaned and serviced regularly and proof thereof will be available on site. • Potable water will be made available daily to workers on site. • Fire-fighting equipment will be available on site, where applicable. • If artefacts or graves are uncovered during construction activities, work in the immediate vicinity will be stopped until the project Archaeologist and SAHRA has been consulted. • Adjacent landowners will be notified of proposed blasting, 24 hours prior to blasting activities.
Site access	**Direct impacts:** • Loss of vegetation • Loss of animal life • Erosion • Pollution • Storm water contamination	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	• Necessary drawings for the upgrading of intersections (if any) are to be submitted to the relevant authority (SANRAL / Provincial Department of Roads / Municipality's Department of Roads) for approval, and the upgrades are to be implemented • The current access road should be

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	Indirect impacts: • Loss of vegetation • Loss of animal life • Erosion • Surface water contamination	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	improved, when required • Proper storm water measures are to be implemented to avoid run-off of water and washing of sand / soil onto the road • Erosion measures will be implemented • Removal of vegetation will be kept to the required area • No animals will be hunted / captured on site (only to be undertaken by a relevant specialist)
	Cumulative impacts: • Loss of vegetation • Loss of animal life • Erosion • Surface and groundwater contamination	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
Employee conduct on site	**Direct impacts:** • Loss of vegetation • Loss of animal life • Erosion • Pollution • Storm water contamination • Occurrence of waste on site • Various health and safety aspects	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	• No animals may be harmed / captured / trapped and / or hunted. This must be strictly enforced. • Animals found at the construction site will be removed and relocated to an appropriate area, by a suitable, qualified person • No open fires allowed. Provision will be made that no accidental fires are started. • No firewood will be collected on site or in surrounding areas, without written approval from the landowner.
	Indirect impacts:	**Without Mitigation:**	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	• Loss of vegetation • Loss of animal life • Erosion • Pollution • Storm water contamination • Occurrence of waste on site • Various health and safety aspects • Fire outbreaks	High Negative **With Mitigation:** Low Negative	• No smoking or open fires will be allowed near storage facilities • No waste may be dumped on site • Employees should make use of the ablution facilities provided
	Cumulative impacts: • Loss of vegetation • Loss of animal life • Erosion • Pollution • Storm water contamination • Occurrence of waste on site • Various health and safety aspects • Fire outbreaks	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Soil, erosion and vegetation management	**Direct impacts:** • Destruction of vegetation • Loss of topsoil • Loss of vegetative species of conservational concern • Noise elevation due to construction activities • Nuisance dust generation • Visual impact of rock and spoil material dumps	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	• Construction activities will be limited to designated construction areas to prevent peripheral impacts on surrounding natural habitats. Construction vehicles will also keep to constructed roads where possible, so that natural vegetation is not destroyed unnecessarily. • Access roads or temporary crossings must be non-erosive, structurally stable and not induce flooding / safety hazard. • If any access road or temporary crossing is impaired, it will be repaired immediately to prevent any future / further damage. • All human movement and activities will be contained within designated construction areas in order to prevent peripheral impacts on surrounding natural habitat. • Erosion management is important.
	Indirect impacts: • Erosion • Establishment of alien / invader vegetation species • Possible impact on heritage artefacts • Loss of fauna on site.	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	Cumulative impacts: • Erosion • Establishment of alien vegetation species	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	Rehabilitation measures must be monitored to ensure that no erosion has occurred and the disturbed areas have been adequately re-vegetated. • Concurrent rehabilitation of disturbed areas will be undertaken to help the recovery of the vegetation. • Stockpiled soil to be used for the rehabilitation of the disturbed area will be stockpiled in an area where it will not be disturbed by vehicles • Stockpiled soil will be protected from washing away during rainstorms. For example: • One layer of bricks or stones can be placed around the stockpiled topsoil. • Bricks may be placed around the stockpiles, to limit the loss thereof due to rainy events. • Stockpiles should not be higher than 1.5 m. • The gradient of stockpiles should not be greater than 1:1.5. • Stockpiles should be located away from drainage lines, watercourses and

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			areas of temporary flood • All soil excavated and not to be removed from the site, is to be separated into top- and subsoil. Subsoil must be used for backfilling and topsoil for landscaping and rehabilitation of disturbed areas • Stockpiled material not to be removed from the site will be placed on the cleared areas once construction is completed. Re-spreading of topsoil is to be done to the depth recommended by the ecological specialist. • Fertilisers should be used where topsoil and subsoil was mixed or where the topsoil is not up to original standard • Indigenous tree species in the vicinity of the operational site (if any) should be marked with danger tape. Disturbance to such species should be avoided, where possible. • A permit for the removal of protected plant species will be obtained before the removal of these species (if any).

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			• An alien control and monitoring programme will be developed starting during the construction phase and will be carried over into the operational phase. • Any proclaimed weed or alien species that germinates during the contract period will be cleared by hand / approved chemicals before flowering thereof. • Imported fill material will be monitored during and after construction for the presence of any alien species. Any such species will be removed immediately. • Fire fighting equipment will be available on site. • Species, especially grasses, trees and shrubs occurring in the region will be used to rehabilitate disturbed areas. • Compacted soils (such as dirt tracks not to be utilised during the operational phase) must be ripped to ensure the establishment of natural occurring vegetation.

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			• Should natural re-growth not be sufficient, the area should be hydro-seeded. • Concurrent rehabilitation should be undertaken, where possible. • Vegetation clearance will be limited to the required area. • Speed limit will be enforced on the construction vehicles and these vehicles will only make use of designated roads / pathways. • Dust control measures will be implemented if nuisance dust generation occurs during the construction period. • All archaeological findings (if any) should be recorded and reported to SAHRA. No construction activities in the area may proceed without the authorisation from SAHRA. • Storm water measures will be implemented in order to manage storm water and this will also prevent erosion. • Visual inspections for the occurrence

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			of erosion should be undertaken on a weekly basis. • No animals may be captured / harmed / killed on site. Animals found at the construction site will be removed and relocated to an appropriate area, by a suitable, qualified person • Any occurrences of harmed animals should be reported to the ECO and recorded as such. • Although the area is somewhat modified it was notable that along the banks of the Sandspruit, several specimens of the protected *Crinum bulbispermum* occurs: • Dredging operations including any associated disturbance should avoid the natural vegetation along the western banks of the river in order to minimise the impact on these plants. • Should any specimens require removal for the dredging operations, the necessary permits will have to be obtained to do so. Any removed

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			specimens should be transplanted to an adjacent area where it will remain unaffected. • Additional mitigation which should be considered in order to decrease the impact that dredging operations will on the Sandspruit include: • Limiting the extent of dredging the main channel of the Sandspruit, immediately upstream of the weir, and to a maximum section of 100 meters upstream of the weir. • Avoiding the western bank of the river completely and also retaining the floodplain and associated wetland areas intact (these areas occurring between the main channel and the toe of the dam wall). • Avoiding the removal of vegetation as far as possible and avoiding the removal of vegetation outside the main channel completely. • Undertaking of dredging should be limited to winter months (May to September) when dredging operations

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			will be least likely to be affected by flooding and disturbance will also be limited. • Vehicles will have to access the main channel. This should be limited to a single access road into and out of the main channel. • Excavated sediment should be removed from the area and disposed of or used in agricultural activities and should not be stockpiled at the site. • Following the dredging operations, any disturbance of the banks, vegetation or wetland areas should be rehabilitated. It is important that riparian vegetation be re-established where they were removed. This can be attained by removing sods of the indigenous sedges and grasses as listed for the river and replanting these in disturbed areas • Areas where dredging and disturbance takes place is normally susceptible to the establishment of exotic weeds and invaders. It will

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			therefore be important to monitor and eradicate any invasive weeds. • A comprehensive monitoring and rehabilitation programme should be initiated, which should be maintained at least for the duration of dredging, when impacts are anticipated to be most significant. • Given the significant extent of dredging (1.1. hectares) additional monitoring should include monthly monitoring of sediment release upstream, at the site and downstream in order to determine the extent to which dredging is causing sedimentation which should also allow for remediation where high impacts are observed. • Biomonitoring should be conducted at least every three months and should include indices such as WET-Health and SASS5 or a combination thereof.
Minimise contamination and sterilisation of soil	**Direct impacts:** • Slow regrowth of natural occurring	**Without Mitigation:** Medium Negative	• Use of potentially polluting and hazardous substances should be strictly controlled • If soil is significantly contaminated by

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	vegetation during the rehabilitation phase • Loss of vegetation	**With Mitigation:** Low Negative	hazardous substances, then this soil is considered as hazardous and should be disposed of according to best practices • Repair / maintenance will be conducted on site, and impacts like oil spills should be appropriately mitigated. Spill response procedures must be clearly defined and well known by all staff. • All threatened or protected plant species as specified by the NEM: Biodiversity Act (2004) will be identified on site. Permits are required for the removal / transplantation of these plants.
	Indirect impacts: • Loss of vegetation • Loss of animal life • Establishment of alien vegetation • Erosion	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Loss of vegetation • Loss of animal life • Establishment of alien vegetation • Erosion	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
Ablution Facilities	**Direct impacts:** • Pollution of surface water runoff • Pollution of soil	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	• No open areas or the surrounding vegetation may be used as 'toilet facilities'. • Toilets should be available for all employees. Where waterborne sewerage is not available, the ECO must designate an area within the boundaries of the site for the erection of portable chemical toilets. • Toilet facilities shall occur at a minimum
	Indirect impacts: • Pollution of surface water runoff • Pollution of soil • Pollution of	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	groundwater • Odour • Unnatural enrichment of soil		ration of 1 toilet per 15 employees. • Toilets shall be maintained in a hygienic state and serviced when required. • Temporary toilets should be serviced regularly and the contents be removed to a licensed disposal facility.
	Cumulative impacts: • Pollution of surface water runoff • Pollution of soil • Pollution of groundwater • Odour • Unnatural enrichment of soil	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
Handling of waste / Waste Management (Note that waste refers to all construction debris and domestic waste generated due to construction activities.)	**Direct impacts:** • Spillage of material to be utilised during the construction phase as well as untreated sewage to the surrounding environment • Dumping of construction rubble and general waste on site	**Without Mitigation:** Medium-High Negative **With Mitigation:** Low Negative	• The contractor is responsible for the removal of construction waste. • Suitable containers (weather and vermin proof) will be placed on site to collect all solid waste. These will be emptied regularly. • No littering is permitted. During the construction and operational phase the site will be maintained in a neat and tidy condition. • All solid waste produced will be disposed of at an authorized landfill site.

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	Indirect impacts: • Surface and groundwater pollution due to spillage of potential hazardous substances such as untreated sewage from the temporary toilets and hydraulic material. • Impact on waterways (including the natural habitat of the area), including pollution. • Pollution of soil	**Without Mitigation:** Medium-High Negative **With Mitigation:** Low Negative	• Please note that most of the dredged soil will be removed from the site, and used for levelling purposes by the applicant (also the landowner) on property belonging to the applicant • No dumping, burning or burying of waste will be undertaken on site. • All hazardous waste will be disposed of at an authorized hazardous landfill site. • Recyclable hazardous waste will be re-used or sold to recycling contractors, where possible • A waste management plan will be compiled and designed to ensure that adequate waste management activities are undertaken. • Areas used for waste storage and loading of hazardous materials should be lined and bund walls have to be erected to contain any spills that might occur. • Waybills providing evidence of correct disposal procedure must be provided for the ECO's inspection. • Waste classification should be undertaken. • Visual inspections for the occurrence of
	Cumulative impacts: • Pollution of downstream watercourses • Pollution of soil • Pollution of groundwater • Air pollution	**Without Mitigation:** Medium - High Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			pollution should be undertaken daily. • Spills should be cleaned up immediately according to best practices • DWS should be notified of any spillage / pollution of water sources (groundwater and / or surface water) within 24 hours of occurrence • Record should be kept on site to indicate date of visual inspection, any spillages observed, and manner in which spill was treated.
Health, safety and security	**Direct impacts:** • Road safety at road crossings • Injuries on site • Health issues on site (for example, due to pollution) • Unauthorised entry	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	• Site should be fenced / marked with danger tape, where possible. • The contractors will comply with the Occupational Health and Safety Act, National Building Regulations and any other national, regional or local regulations with regard to safety on site. • Construction contracts will include safety and security measures for staff. • Precautions to ensure that construction staff and sites are visible and proper PPE will be provided to all employees. • Suitable warning and information signage should be available at the storage
	Indirect impacts: • Loss of vegetation and animal life due to possible fire outbreaks • Road safety issues at road crossings	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	• Injuries on site • Health issues on site (for example, due to pollution) • Unauthorised entry		facilities. In addition, telephone numbers of emergency services (including local firefighting services) must be posted conspicuously on site. • Employees should be made aware of the health risks associated with any hazardous substances / dangerous goods used or stored on site. This includes soil that was contaminated with oil or diesel, etc. • Employees should receive relevant safety training in handling of hazardous substances / dangerous goods associated with the proposed project. • Construction work within road reserves will accommodate road users as far as possible. This includes the following: - Roads will be crossed in half widths at a time to minimise the impact on vehicular traffic, where possible. - Construction along and across existing roads will be executed in such a manner that both pedestrian and vehicular traffic is accommodated at all times. - The contractor will be required to maintain adequate access to all public
	Cumulative impacts: • Loss of vegetation and animal life due to possible fire outbreaks • Road safety issues at road crossings • Injuries on site • Health issues on site (for example, due to pollution) • Unauthorised entry	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			and private property at all times. - Contractor will supply, erect and maintain road signs for all work areas conforming to the prescribed layout and requirement of the South African Road Traffic Signs Manual and other relevant notices. • Fire extinguishers will be available on site and in the construction camp (if any). • The contractor will be required to maintain adequate access to all public and private property at all times. • Speed limits of 20km/h will be enforced. • All relevant IAPs will be notified prior to any blasting activities • All relevant IAPs will be notified 24 hours prior to any known potential risks associated with the site and the activities to be undertaken on site. (For example, possible downstream flooding as a result of upstream diversion that are being removed.) • The necessary precautions with regard to road safety will be implemented for construction work within road crossings. • All injuries should be recorded.

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Heritage	**Direct impacts:** • Harm to unknown heritage resources	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	• In the case of the discovery of any heritage, archaeological or palaeontological significance, the work in the area will be stopped and reported to the archaeologist and SAHRA. Any construction activities in the nearby vicinity may only commence after approval is obtained from SAHRA as well as the ECO. • Known heritage resources (if any) must be avoided as far as possible. • Employees should be encouraged and informed of the need to be on the look-out for potential fossils / buried archaeological material. • In the case of the discovery of any stone tools or other archaeological or palaentological material, the work in the immediate vicinity should temporarily cease and reported to the archaeologist and SAHRA. Should any human remains be exposed, the archaeologist as well as the local SAPS should be notified. • If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones,
	Indirect impacts: • Loss of heritage resources	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Loss of heritage resources	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Tel: 021 462 5402) must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Tel: 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA. • Appropriate measures should be undertaken by the ECO until the archaeologist / SAPS visits the site. This should include the following: • Site should be fenced with 'danger tape' • Position of finding should be recorded • Depth of finding should be recorded

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			• Digital image of the finding should be taken • No information on the findings may be made public without the consent of the archaeologist / SAPS. • Construction activities in the area may only continue after approval from the archaeologist and SAHRA.
Noise and dust control	**Direct impacts:** • Elevation of noise levels • Generation of nuisance dust	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	• Construction activities will be limited to normal daytime hours, where possible • Noise levels will be kept as low as possible during the construction phase in order not to disturb adjacent landowners • Proper mitigation measures will be implemented to limit noise (e.g. the installation of silencers, where required). • Proper mitigation measures will be implemented to limit the formation of dust (e.g. wetting of construction area, when required). • The speed of the construction vehicles will be limited to avoid dangerous conditions, the formation of dust and the excessive deterioration of roads being used.
	Indirect impacts: • Air pollution • Increase in noise levels outside of the proposed construction site may have a negative impact on surrounding landowners / occupants	**Without Mitigation:** Medium Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Air pollution • Increase in noise levels	**Without Mitigation:** High Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	outside of the proposed construction site may have a negative impact on surrounding landowners / occupants	**With Mitigation:** Low Negative	
Handling and Storage of materials	**Direct impacts:** • Soil pollution • Air pollution • Fire outbreaks • Surface water pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	• All chemicals used during the development, including fuel, will be stored in a proper storeroom or protected area to prevent pollution. • Vehicles will be serviced at designated areas. No oil, diesel or other chemicals may be spilled or discharged anywhere. • Where applicable, the contractors will ensure that all relevant national, regional and local legislation regarding storage, transport, use and disposal of petroleum, chemical, harmful or hazardous substances and materials are adhered to, where necessary. • Cement and concrete mixing, if applicable, will only take place within the construction site. No concrete will be mixed directly on the ground. • All environmental problems occurring on
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Loss of vegetation and	**Without Mitigation:** High Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	**With Mitigation:** Low Negative	the site such as chemical spillage, wasteful water disposal, etc. will be reported to the ECO. The ECO should implement best practices to rectify the impacts thereof on the environment. • Spill response equipment must be available during the handling and loading of hazardous waste (if any). • Hazardous substances such as fuel to be stored in above ground tanks are to be stored in bunded areas. • Bund walls will have a capacity of at least 110% of the total capacity of the stored volume. • No oil, diesel or other chemicals may be spilled or discharged anywhere and contact with bare soil should be avoided at all cost. • Drip trays will be used during the servicing of vehicles as well as the transfer of chemicals / substances from transportation vehicles. • A monitoring system should be implemented to determine the occurrence (if any) of any fuel / oil spillages /

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
			untreated sewer. • The necessary mitigation measures should be implemented immediately, should any leakages / spills be detected. • Material stockpiles, such as bricks and pipes, must be stable and well secured to avoid collapse and possible injury • Material and Safety Data Sheets (MSDSs) should be readily available on site for all hazardous materials. MSDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases or escapes. • Storage areas should be kept clean and free from any accumulation of combustible matter (such as paper) and any possible source of ignition should be removed.
Hazardous waste management	**Direct impacts:** • Soil pollution • Air pollution • Fire outbreaks • Surface water pollution • Injuries		• Hazardous wastes must be separated from general wastes, stored within secondary containment in appropriate containers. • Proper storage facilities for the storage of hazardous / dangerous goods must be provided to prevent the migration of

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	• Health issues		spillage into the soil and or groundwater. • Certificates / waybills of hazardous waste disposals are to be available on request as well as auditing purposes. This includes the removal of soil contaminated with hydrocarbons. • Storage of hazardous substances and refuelling areas are to be bunded with an impermeable liner to protect groundwater quality and must comply with the relevant SANS codes. • Areas used for the storage of hazardous materials are to be clearly indicated as such.
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
Hazardous and Flammable materials: Delivery	**Direct impacts:** • Soil pollution • Air pollution • Fire outbreaks	**Without Mitigation:** High Negative **With Mitigation:**	• All deliveries (especially of hazardous nature) must be supervised. • Subcontractors and delivery companies should be informed of the delivery

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	• Surface water pollution • Injuries • Health issues	Low Negative	procedures and made aware of restrictions as to where materials may be stored. • Loads must be secured to prevent spillage during transportation thereof. • Hazardous substances are to be transported in sealed drums or bags
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
Hazardous and Flammable materials:	**Direct impacts:** • Soil pollution	**Without Mitigation:** High Negative	• Limit cement and concrete mixing to single sites, where possible.

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Cement and / or concrete mixing	• Air pollution • Fire outbreaks • Surface water pollution • Injuries • Health issues	**With Mitigation:** Low Negative	• No mixing allowed directly onto the ground. • All visible remains of excess material will be treated as hazardous waste. • Solid concrete waste may be treated as inert construction rubble. However, wet cement and liquid slurry and cement powder must be treated as hazardous waste
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Hazardous and Flammable materials: Gas Storage	**Direct impacts:** • Air pollution • Fire outbreaks • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	• All combustible materials are to be store at least 3 m from any gas storage areas. In case of any flammable or any other gas storage areas, open flames, welding and cutting operations, smoking, etc. shall be prohibited in or near the storage area. • No gas will be delivered until the site is registered with local Fire Safety. • Cylinders should always be stored in a well-ventilated area away from spark, flames or any source of heat or ignition. • Cylinders should always be handled, stored, used and transported in an upright position. It should not be dropped, dragged or rolled on their sides or allowed to skid. Cylinders that are too large to be carried shall be tilted and rolled on the rims of their foot rings or bases. • Valves should be kept properly closed.
	Indirect impacts: • Air pollution • Fire outbreaks • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Air pollution • Fire outbreaks • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
Hazardous and Flammable materials: Chemicals, Grease and Oil Storage	**Direct impacts:** • Soil pollution • Fire outbreaks • Surface water pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	• Storage areas must be bunded and hard surfaced in order to protect groundwater quality. • Compliance with SANS codes and hazardous substances bylaws should be adhered to.

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	• All lids must be properly sealed / closed to prevent Volatile Organic Compounds (VOCs) and other potentially harmful gaseous compounds from escaping.
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	
Hazardous and Flammable materials: Hydrocarbon spillages	**Direct impacts:** • Fire outbreaks • Surface water pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	• Spill kits are to be made permanently available at areas which have the potential to be subjected to spillage of hazardous substances and dangerous goods. • Remediation of spillages must be conducted immediately and closed out
	Indirect impacts: • Loss of vegetation and	**Without Mitigation:** High Negative	

Construction phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	animal life due to fire outbreaks • Soil pollution • Surface and groundwater pollution • Injuries • Health issues	**With Mitigation:** Low Negative	within 24 hours. • No waste water or waste will be disposed of into the surrounding environment at any time. Water collected in bunded areas must be collected in containers and disposed of as hazardous waste. • Machinery will be kept maintained in line with manufactures specifications to minimise the risk of hydrocarbon spillages. • An incident reporting system will be implemented in order to ensure incidents, where spillages has occurred, are closed out and appropriate measures are taken to prevent further incidents. • Incidents must be reported to DWS within 24 hours. • Contaminated soil must be disposed of in a hazardous materials skip and removed to a licensed hazardous landfill facility by a licensed contractor.
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Surface and groundwater pollution • Injuries • Health issues	**Without Mitigation:** High Negative **With Mitigation:** Low Negative	

Operational phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
This phase consists of the use of the weir, after the dredging occurred. Maintenance and repair will be undertaken on the infrastructure when necessary.	**Direct impacts:** • Deterioration of the infrastructure in the long term.	**Without Mitigation:** Medium – Low Negative **With Mitigation:** Low Negative	• Maintenance and repair will be undertaken on the infrastructure when necessary. • Soil erosion occurrences will be attended to immediately. • Establishment of alien vegetation will be monitored and alien species will be removed by hand or by an approved chemical before gestation thereof.
	Indirect impacts: • Establishment of alien / invader species due to previous disturbance will also be associated with this phase. • Increase in noise levels during maintenance. • Erosion	**Without Mitigation:** Medium – Low Negative **With Mitigation:** Low Negative	
	Cumulative impacts: • Establishment of alien / invader species due to previous disturbance will also be associated with this phase. • Increase in noise levels during maintenance. • Erosion	**Without Mitigation:** Medium – Low Negative **With Mitigation:** Low Negative	

Operational phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
	• Surface and groundwater pollution		

Decommissioning phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
It is not anticipated that the proposed project will cease in the nearby future. However, if decommissioning is decided upon, a rehabilitation plan will be developed and submitted for approval. The end-use of the area will be kept in mind during the compilation of the rehabilitation plan. Activities associated with the decommissioning phase will be limited to the rehabilitation of areas disturbed during the construction phase. All disturbed areas will be	**Direct impacts:** • Rehabilitation of disturbed area • Re-vegetation • Limit occurrence of erosion • Proper stormwater control • No ponding on site • Limit visual impact	**Without Mitigation:** Medium Positive **With Mitigation:** High Positive	• Temporary structures and office sites (if any) will be dismantled and removed after completion of the construction phase of the project. • All waste, equipment, materials, etc. used during construction will be cleared from the site. The contractors will ensure that the site is cleared and rehabilitated to the satisfaction of the ECO. • An alien plant control and monitoring programme will be implemented. • The establishment of natural occurring vegetation will be encouraged at disturbed areas. • Re-vegetation of disturbed areas will be undertaken with site indigenous species. • Hydro-seeding will be implemented if the establishment of natural occurring vegetation does not occur within reasonable time. • Temporary concrete surfaces (if any) will be removed and compacted areas ripped. • Establishment of extensive alien species will be monitored.
	Indirect impacts: • Rehabilitation of disturbed area	**Without Mitigation:** Medium Positive **With Mitigation:** High Positive	
	Cumulative impacts: • Rehabilitation of disturbed area	**Without Mitigation:** Medium Positive **With Mitigation:** High Positive	

Decommissioning phase			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
rehabilitated according to best practices. A rehabilitation plan will be developed, if it is decided to decommission the weir and associated infrastructure before the cessation of the operation aspects of the said project. The rehabilitation plan will include management and mitigation measures to be implemented during the decommissioning of the project			

No-go Option			
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Keeping the status quo - No dredging near the weir.	**Direct impacts:** • No direct environmental impacts.	**Without Mitigation:** N/A **With Mitigation:** N/A	• The municipality will have to use trucks to transport potable water from adjacent towns. However, this option will largely depend on the availability of employees and suitable trucks. In addition, the adjacent towns do not have enough potable water to provide Senekal with their required volumes of water on a daily basis. Therefore, this option is not seen as a feasible option.
	Indirect impacts: • The applicant will not be able to provide Senekal with sufficient potable water	**Without Mitigation:** High Negative **With Mitigation:** High Negative	
	Cumulative impacts: • This will lead to negative economic and environmental impacts	**Without Mitigation:** High Negative **With Mitigation:** High Negative	

A complete impact assessment in terms of Regulation 19(3) of GN 326 must be included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Environmental impact statement for the proposed dredging at an existing weir, Senekal			
Alternative 1 Preferred			
Nr	**Impact / Activity**	**Without Mitigation**	**With Mitigation**
1	Excavation of sediment within the main channel of the Sandspruit will remove riparian vegetation and disturbance of the soil surface which will result in destabilisation of the riverbed and increase the downstream sediment load. Increased establishment of exotic weeds and invaders due to disturbance caused by dredging is also probable.	High Negative	Medium
2	Construction of an access road across the floodplain and the banks of the river will also cause disturbance although on a local scale. The road will require the removal of riparian vegetation. Increased erosion, sediment load and exotic weed establishment is also likely.	High Negative	Low
3	Impacts on vegetation and listed or protected plant species resulting from the construction phase	High Negative	Medium-Low Negative
4	Impacts on animal species resulting from construction activities	Medium-Low Negative	Low Negative

5	Erosion	High Negative	Low Negative
6	Pollution	High Negative	Low Negative
7	Health and Safety	Medium Negative	Low Negative
8	Heritage, including archaeological and paleontological	Medium-Low Negative	Low Negative
9	Visual and noise	Medium-Low Negative	Low Negative

Alternative 1$_{Preferred}$

The same as above, including:
The expected environmental impacts relating to the proposed project are mostly temporary (during the construction phase) and the mitigation measures referred to in the current document, the EMPr, Specialist Reports as well as Best Practices will ensure that the disturbance is kept to a minimum and ensure that adequate rehabilitation takes place.

No-go alternative (compulsory)

The no-go alternative is not seen as a reasonable / feasible alternative as this will place the Local Municipality in such a position that it will not be able to provide Senekal with potable water, resulting in a possible water shortage and water restrictions on a regular basis.

The proposed water treatment works (EA issued), drying ponds (EA issued) and associated infrastructure is considered essential to enable the municipality to provide the Senekal area with adequate basic services, as the said infrastructure will enable the municipality to treat water to potable water standards. The dredging of the weir is necessary for the optimal operation of the water treatment works, etc.

As the project is described as a basic service, the lack thereof will lead to major social and economic impacts that will indirectly cause severe environmental concerns. The impacts expected during the construction phase of the proposed project can be minimised through the recommended mitigation measures and therefore the no-go alternative is not ideal.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES	

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

Refer to the EMPr in Appendix F for recommended mitigation measures.

Is an EMPr attached?	YES	

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Neil Devenish
NAME OF EAP

SIGNATURE OF EAP _____ DATE _____

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports
Appendix D_1: Heritage
Appendix D_2: Ecological
Appendix D_3: Preliminary Design Report

Appendix E: Public Participation
Appendix E_1: List of identified possible IAPs
Appendix E_2: Proof of notification
Appendix E_3: List of registered parties
Appendix E_4: List of comments received
Appendix E_5: Response to comments received
Appendix E_6: Proof of dBAR to registered parties

Appendix F: Impact Assessment

Appendix G: Management Plans
Appendix G_1: Environmental Management Programme
Appendix G_2: Water Resource Monitoring Plan/Guideline
Appendix G_3: Stormwater Management Plan

Appendix H: Details of EAP and expertise
Declaration by EAP

Appendix I: Specialist's declaration of interest
Heritage
Ecological

Appendix J: Additional Information
Appendix J_1: Confirmation from Municipality
Appendix J_2: Title Deed Document

APPENDIX A

Maps

TYPE OF PLAN: LOCALITY PLAN

mda
Town & Regional Planners, Environmental & Development Consultants
T: 051 447 1583 | P.O. Box 20298, Willows, Bloemfontein, 9320
F: 086 455 2568 | 9 Barnes Street, Westdene, Bloemfontein, 9301

PROJECT:
PROPOSED DREDGING AT A WEIR NEAR DE PUT DAM, SENEKAL

PROJECT BY:
SETSOTO LOCAL MUNICIPALITY

DRAWN BY:
HS

Legend:

- Remainder of the farm De Put 298
- Portion 2 of the farm Veepost 1172
- Portion 5 of the farm Veepost 1172
- Portion 6 of the farm Veepost 1172
- Portion 1 of the farm Veepost 1172

Coordinates:

A	28°21'28.53"S 27°37'15.92"E
B	28°21'28.08"S 27°37'17.67"E
C	28°21'33.77"S 27°37'23.98"E
D	28°21'34.53"S 27°37'22.43"E

TYPE OF PLAN: LOCALITY PLAN

mda
Town & Regional Planners, Environmental & Development Consultants
T: 051 447 1583 | P.O. Box 20298, Willows, Bloemfontein, 9320
F: 086 455 2568 | 9 Barnes Street, Westdene, Bloemfontein, 9301

PROJECT:
PROPOSED DREDGING AT A WEIR NEAR DE PUT DAM, SENEKAL

PROJECT BY:
SETSOTO LOCAL MUNICIPALITY

DRAWN BY:
HS

APPENDIX B

Photographs









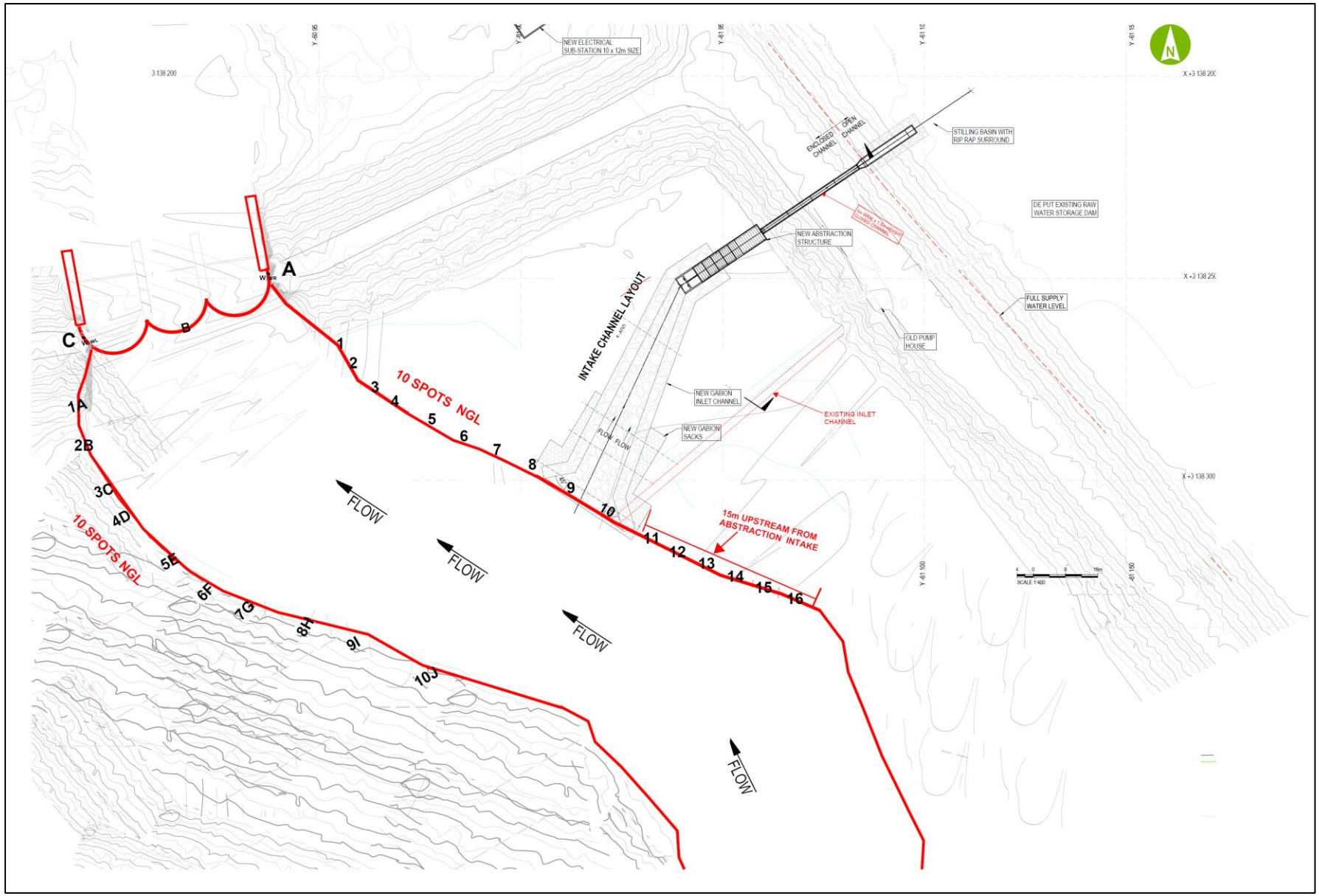






APPENDIX C

Facility Illustration(s)


NEW ELECTRICAL SUB-STATION 10 x 12m SIZE
STILLING BASIN WITH RIP RAP SURROUND
ENCLOSED CHANNEL
OPEN CHANNEL
DE PUT EXISTING RAW WATER STORAGE DAM
NEW ABSTRACTION STRUCTURE
FULL SUPPLY WATER LEVEL
OLD PUMP HOUSE
INTAKE CHANNEL LAYOUT
NEW GABION INLET CHANNEL
EXISTING INLET CHANNEL
NEW GABION SACKS
10 SPOTS NGL
10 SPOTS NGL
15m UPSTREAM FROM ABSTRACTION INTAKE
FLOW
FLOW
FLOW
FLOW
A
B
C
1A
2B
3C
4D
5E
6F
7G
8H
9I
10J
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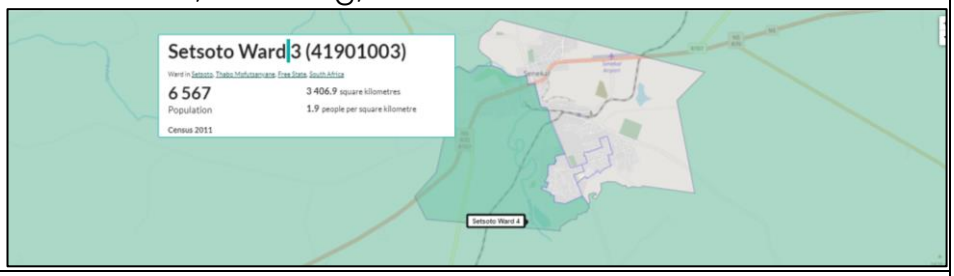
SCALE 1:400

APPENDIX E

Public Participation

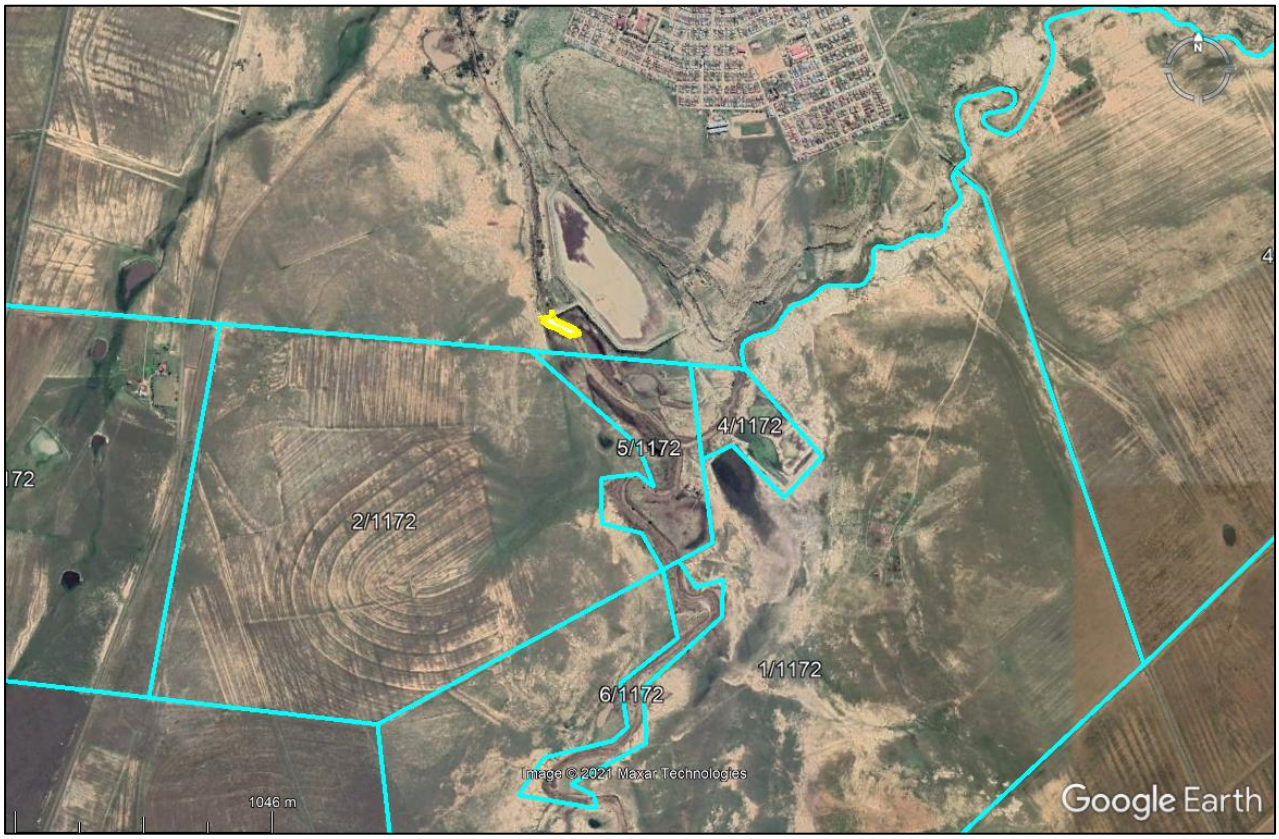
APPENDIX E_1

List of identified possible interested and affected parties

The Proposed Dredging of a Weir, Senekal	
Table 1: List of identified possible interested and / or affected parties	
Authorities & Stakeholders	
Organization	**Contact person and contact detail**
Thabo Mofutsanyana District Municipality	The Municipal Manager Ms. Takatso Lebenya Tel: (058) 718 1036 / 1089 Fax: (058) 718 1034 Email: Takatso@Tmdm.Gov.Za Private Bag X810, Witsieshoek, 9870 1 Maimpoi Street, Old Parliament Building, Phuthaditjhaba
Setsoto Local Municipality: Municipal Manager	Mr. Tshepiso "Sugar" Ramakarane Tel: (+27 51) 933 9302 Fax: (+27 51) 933 9363 Email: tshepiso@setsoto.co.za / manager@setsoto.co.za 27 Voortrekker Street, Ficksburg
Setsoto Local Municipality: Ward Councillors: Wards 3 & 4	Ward 3: Cllr. Mamotena Lydia Mthimkulu Ward 4: Cllr.Mahlomola Relehlatsi P.O. Box 116, Ficksburg, 9730 
Department Of Agriculture	The Assistant Director Mr Jack Morton P.O. Box 34521 Faunasig Bloemfontein 9325 mortonj@dard.gov.za Surprisey Mathibela Department of Agriculture and Rural Development Private Bag X21 Bethlehem 9700 Surpriseymc#gmai.com
Department Of Public Works: Property Manager	Department Of Land Affairs Director Property Management Of The Provincial Department Of Public Works & Infrastructure Ms Agnes Ntilane 136 Charlotte Mareka Street Bloemfontein 9300

The Proposed Dredging of a Weir, Senekal		
Table 1: List of identified possible interested and / or affected parties		
	Ntilanea@fsworks.gov.za	
Department Of Water And Sanitation	Mr. W Grobler Private Bag X528 Bloemfontein 9300 Groblerw@dws.gov.za	
SAHRA	South African Heritage Resources Agency (SAHRA) Head Office 111 Harrington Street Cape Town 8001 On-line Notification	
SAHRA Free State	Ntando PZ Mbatha Heritage Coordinator Corner Henry And East Burger Street Department Of Sport Arts Culture And Recreation Office 204 Bloemfontein 9301 mbatha.npz@sacr.fs.gov.za	
Eskom	Phindi Rapudungoane Land And Rights Officer Tell: 051 4042284 Fax: 086 5398399 Phindi.Rapudungoane@Eskom.co.za Mahlatse Moeng Environmental Officer Land Development And Environment Eskom Distribution-FSOU Eskom Centre First Floor 120 Henry Street Westdene Bloemfontein Tel: 051 404 2287 Cell: 079 199 0679 Fax: 086 604 5709 Email: Mahlatse.Moeng@Eskom.co.za	
Adjacent Landowners		
Farm Name	**SG Number**	**Contact Person Name and Address**
Portion 1 of the farm Veepost 1172	F03000000000117200001	Setsoto Local Municipality: Municipal Manager Mr. Tshepiso "Sugar" Ramakarane
Portion 2 of the farm Veepost 1172	F03000000000117200002	

The Proposed Dredging of a Weir, Senekal		
Table 1: List of identified possible interested and / or affected parties		
Portion 4 of the farm Veepost 1172	F03000000000117200004	Tel: (+27 51) 933 9302 Fax: (+27 51) 933 9363 Email: tshepiso@setsoto.co.za / manager@setsoto.co.za 27 Voortrekker Street, Ficksburg
Portion 5 of the farm Veepost 1172	F03000000000117200005	
Portion 6 of the farm Veepost 1172	F03000000000117200006	



APPENDIX E_2

Proof of notification

Site Notices:

Advert:

KROONSTAD EN OMLIGGEND: Adelina Mokoena | 071 326 9912 | adelina.mokoena@media24.com - BETHLEHEM EN OMLIGGEND: Martia Mettler | 071 680 2530 | martia.mettler@media24.com

Geklassifiseerd

Eksklusief aanlyn by OLX www.olx.co.za Waar kopers en verkopers mekaar ontmoet

PERSOONLIKE DIENSTE

PERSOONLIK 1460

Justine-konsultante word benodig in Kroonstad-distrik. Vir ekstra inkomste, skakel **Sarie 082 552 3349**

ALGEMENE & HUISDIENSTE

HUISVERBETERINGS BINNE 1835

BLINDER-AANBIEDING: 20% Afslag op alle Blinders. **Kontak Bianca by Top Carpets - 082 558 8741**

ALLERLEI 1845

LEKKENDE DAK? Skakel die spesialis-waterdigter. Meer as 29 jaar ondervinding. 5-jaar-waarborg. **Skakel Luther Cronje 082 891 4052**

TOP CARPETS AND FLOORS
Vloerbedekking nou beskikbaar
"Waterbestande Houtvoorkoms"
Kunsmatige Gras
"In and Outdoor"
"Outdoor" Los Matte nou bekikbaar
Was van Matte & Sitstelle
Blindeers 20% Afslag
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LOODGIETERS 1805

Naude CONSTRUCTION
PLUMBING
Plumbing repairs
Geyser installations
Blocked sewerage
Tel. 056 212 7842
GENERAL CONSTRUCTION

EIENDOMME

WOONSTELLE TE HUUR 3250

Bethlehem: Netjies gemeubileerde eenhede, elk met private badkamer, motorafdak en veilige omheining. Skakel **082 927 7820.**

BETREKKINGS 3600

BETREKKINGS GESOEK 3670

Ek vra gastehuis of huiswerk 5dae. Baie hardwerkend. **083 781 6362**

ALGEMEEN 3680

Call Centre Agent

An Attorney§ Practice based in Kroonstad is looking for self-motivated individual to join the Debt Collection Team.

The ideal person would need to have the following skills and experience:
-Multi Lingual
-Strong Communication Skills
-Target driven
-Computer literacy
-Minimum Grade 12 Certificate

Basic Salary + Commission

Please note that only suitable applications with relevant experience will be considered. Should you not receive a response to your application within 50 days, your application has not been successful.

Fax or E-mail CV to: rene@sadler.co.za
Close date: 2021/03/29

Vakante Pos beskikbaar in Kroonstad vir Gekwalifiseerde Elektrisiën. Stuur CV na **086 273 6166**

REGSKENNISGEWINGS & TENDERS

VERLORE DOKUMENTE 4040

McINTYRE VAN DER POST LAW FIRM

FORM JJJ

Notice is hereby given in terms of regulation 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of the DEED OF TRANSFER T16370/2004, passed by 1. GERT JOHANNES RAUTENBACH, Identity Number 680921 5018 084, married out of community of property, 2. SUSANNA MARIA RAUTENBACH, Identity Number 761112 0093 080, married out of community of property, in favour of 1. SAREL JACOBUS MYBURGH, Identity Number 770919 5254 080, unmarried, 2. SAREL JACOBUS MYBURGH, Identity Number 520421 5066 088, married out of community of property, in respect of certain property ERF 1849 BETHLEHEM EXTENSION 24, DISTRICT BETHLEHEM, PROVINCE FREE STATE, which has been lost or destroyed.
All interested persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deeds at Bloemfontein within two weeks from the date of the publication of this notice.
Dated at Bloemfontein this 25 February 2021.
McINTYRE VAN DER POST
12 Barnes Street, Westdene
BLOEMFONTEIN, 9301
lizanne@mcintyre.co.za
Contact number:
051 505 0200

LOST OR DESTROYED DEED

Notice is hereby given in terms of regulation 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of T4765/2020 passed by MANANA FRANCINA MOFOKENG in favour of THAPELO JOSEPH SIBI in respect of certain PORTION 39 (OF 7) OF ERF 4049BETHLEHEM, DISTRICT BETHLEHEM, PROVINCE FREE STATE which has been lost or destroyed.
All interested persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deeds at BLOEMFONTEIN within two weeks from the date of the publication of this notice.
Dated at BETHLEHEM on this 5th day of March 2021
Applicant:
Address: Sabia Dbro Office No. 2, 24 Muller Street East, Bethlehem
E -mail address: bethlehem@mvdw.co.za
Contact number: 058 303 1045
Conveyancer: Meyer van der Walt Inc.

LOST OR DESTROYED DEED

Form JJJ added by GNR. 62 of 25 January 2019 Notice is hereby given in terms of regulations 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of DEED OF TRANSFER NUMBER T21100/2007 passed by 1. Quentin Andrew De Bruyn Identity Number 710820 5151 08 1
Married out of community of property
and
2.Andrea Susan De Bruyn (formerly known as Thorn) Identity Number 800607 0097 08 3
Married out of community of property
in favour of
THE TRUSTEES FOR THE TIME BEING OF RIAAN JACOBS TRUST
Registration number IT1881/1998
in respect of certain
1.ERF 344 ROSENDAL, DISTRICT FICKSBURG, PROVINCE FREE STATE
IN EXTENT 743 (SEVEN HUNDRED AND FORTY THREE) SQUARE METRES
AND
2.ERF 345 ROSENDAL, DISTRICT FICKSBURG, PROVINCE FREE STATE
IN EXTENT 743 (SEVEN HUNDRED AND FORTY THREE) SQUARE METRES
AND
3. ERF 346 ROSENDAL, DISTRICT FICKSBURG, PROVINCE FREE STATE
IN EXTENT 743 (SEVEN HUNDRED AND FORTY THREE) SQUARE METRES
ALL Held by Deed of Transfer T21100/2007
which has been lost or destroyed.
All persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deeds Bloemfontein at Bloemfontein within two weeks after the date of the publication of this notice.

Dated at PRETORIA this 26TH day of FEBRUARY 2021

Applicant:HEUNIS & STRAEULI INC
Address:
Suite 1, Selati House, 36 Selati Street, Alphen Park, Pretoria 0081
E-mail address:heunis@hsi.co.za; fransa@hsi.co.za
Contact Number:012 460 2017
C/O:

EG COOPER & MAJIEDT INC
Address:
77 Kellner Street, West Dene, Bloemfontein, 9300
E-mail address:
faber@egc.co.za
Contact Number:051 447 3374

McINTYRE VAN DER POST LAW FIRM

VERLORE OF VERNIETIGDE TITELBEWYS

Hiermee word kennis gegee dat kragtens die bepalings van regulasie 68 van die Registrasie van Aktes Wet, 1937, dit die voorneme is om aansoek te doen om die uitreiking van 'n gesertifiseerde afskrif van TransportAkte T13832/2014 gepasseer deur ALFORD ADOLPH GRIMBEEK, as gevolmagtigde van DEON JACQUES GRESSE, kragtens 'n spesiale prokurasie gedateer 30 September 2013 te KROONSTAD synde die Eksekuteur in die boedel van Wyle THOLE PETRUS SETHOLE wie op 24 September 2009 oorlede is, kragtens Eksekuteursbrief 16609/2009 uitegereik deur die Assistent Meester van die Vrystaatse Hoëhof, Bloemfontein op 15 Desember 2009, ten gunste van MOTSAPI ABRAM MENYATSO,
Identiteitsnommer 5905075610084 en BALEKILE MARTHA MENYATSO
Identiteitsnommer 6212150529084, Getroud binne gemeenskap van goed met mekaar, ten aansien van sekere GEDEELTE 8 VAN DIE PLAAS RIVERDALE 289 DISTRIK KROONSTAD PROVINSIE VRYSTAAT, wat verlore geraak het or vernietig is. Alle belanghebbendes wat teen die uitreiking van sodanige afskrif beswaar het, word hierby versoek om dit skriftelik in te dien by die Registrateur van Aktes te BLOEMFONTEIN binne twee weke vanaf datum van publikasie van hierdie kennisgewing.
Gedateer te BLOEMFONTEIN op hede die 26e dag van FEBRUARIE 2021.
MCINTYRE VAN DER POST INC
12 Barnes Straat,
Bloemfontein, 9301
portia@mcintyre.co.za
Kontaknommer:
051 50 50 200

AANDAG ALLE ADVERTEERDERS
Die gebruik van die letter "A", leestekens soos "!" of "@" of die gebruik van syfers met die doel om die advertensie na die bopunt van die klassifikasie-lys te skuif, is streng verbode.
SMALLS NOTICE

Du Randt & Louw
Ingelyf/Incorporated
(Reg No 1997/11218/21)

Notice is hereby given in terms of regulation 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of Deed of Transfer TE15542/2006 passed by
MOQHAKA LOCAL MUNICIPALITY
in favour of
PETRUS LESIBO
Identity Number 371101 5266 08 2
And
NANIKI THALITHA LESIBO
Identity Number 390916 0263 08 2
Married In Community of Property to each other

in respect of certain

ERF 644 MAOKENG, DISTRICT KROONSTAD, PROVINCE FREE STATE

which has been lost or destroyed.

All persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deeds at BLOEMFONTEIN within two weeks after the date of the publication of this notice.

Dated at KROONSTAD on 15 MARCH 2021.

Applicant: MELIZE KACHELHOFFER
DU RANDT & LOUW INCORPORATED
Address: Du Randt & Louw Buiding, 25 President Street, Kroonstad, 9499
E-mail address: melize@drl.co.za
Contact number: 056 212 4275

Claude Reid

LOST OR DESTROYED DEED

Notice is hereby given in terms of Regulation 68 of the Deeds Registries Act, 47/1937 of the intention to apply for the issue of a certified copy of Deed of Transfer Number T6036/1989 passed by Maria Jacoba Boshoff Identity Number 421103 0055 007 and Cecilia Jacoba Pieterse Identity Number 101101 0033 005 in favour of the Trustees of Tweefontein Trust K591/1977D in respect of certain

The farm AVONDSON 261 District Senekal Province Free State which has been lost or destroyed.

All interested persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deeds at Bloemfontein within two weeks from the date of the publication of this notice.

DATED at BLOEMFONTEIN on this 25 day Of February 20212

Applicant
CLAUDE REID INC.
165 ST. ANDREW STREET
BLOEMFONTEIN
9301
dalize@claudereid.co.za
051 447 9881

OIS OMGEWINGSIMPAKSTUDIE 4085

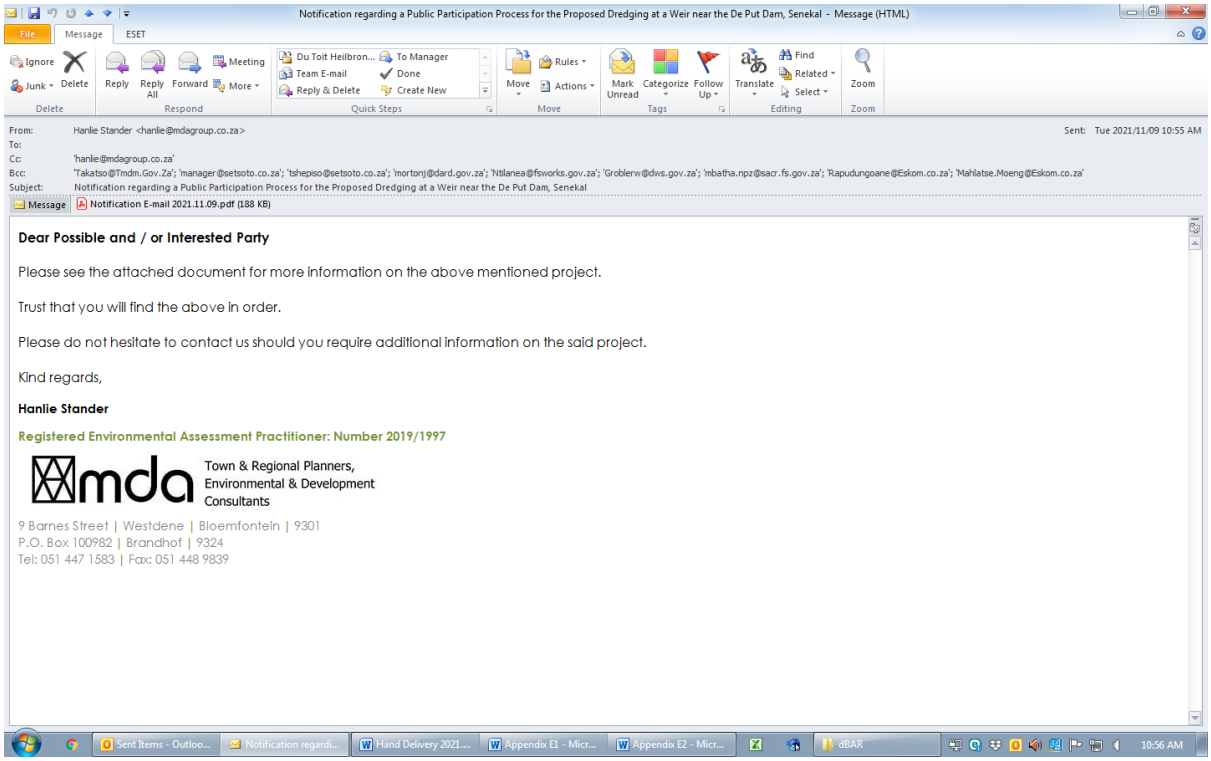
NOTICE

Notice is given in terms of:
•Regulation 41(2)(b) of the Environmental Impact Assessment Regulations of 2017, No. 326 published in Government Notice No. 40772 under the National Environmental Management Act, 1998 (Act No. 107 of 1998) that an application for environmental authorization will be submitted to the Free State Department of Economic Development, Small Businesses, Tourism and Environmental Affairs (DESTEA); and
•Regulation 17(3)(c) of the Regulations Regarding The Procedural Requirements for Water Use License Applications and Appeals of 2017 No. R. 267 published in Government Notice No. 40713 of 24 March 2017 under the National Water Act (Act 36 of 1998) Section 21 as amended, that an application for a Water Use License will be submitted to the Department of Water and Sanitation (DWS); for the following:
Project: Proposed dredging at a weir near the De Put Dam, Senekal.
Locality: South of the De Put Dam on the Remainder of the farm De Put 298, Senekal.
Proponent: Setsoto Local Municipality.
If you have any information or comments regarding the environmental impact of the proposed development or need additional information regarding the proposed development, please submit your name, contact information and interest to Hanlie Stander at the MDA '(hanlie@mdagroup.co.za / Tel: 051 447 1583 / Fax: 051 448 9838 / P.O. Box 100982, Brandhof, Bloemfontein, 9324) within 30 days of this notice.

HERREGISTRASIES 4085

ENTREPROP CC : 1994/021999/23
Please take note that Hermanus Eduard Christoffel de Bruyn intends on making an application to the Registrar of Companies for reinstatement of the above mentioned. Any objection to be lodged within 21 days to CIPC, PO Box 429, Pretoria, 0001.

GEKLASSIFISEERD


Notification regarding a Public Participation Process for the Proposed Dredging at a Weir near the De Put Dam, Senekal - Message (HTML)
File
Message
ESET
Ignore
Junk
Delete
Reply
Reply All
Forward
Meeting
More
Respond
Du Toit Heilbron...
Team E-mail
Reply & Delete
To Manager
Done
Create New
Quick Steps
Move
Rules
Actions
Mark Unread
Categorize
Follow Up
Tags
Translate
Find
Related
Select
Editing
Zoom
From: Hanlie Stander <hanlie@mdagroup.co.za>
Sent: Tue 2021/11/09 10:55 AM
To:
Cc: 'hanlie@mdagroup.co.za'
Bcc: 'Takatso@Tmdm.Gov.Za'; 'manager@setsoto.co.za'; 'tshepiso@setsoto.co.za'; 'mortonj@dard.gov.za'; 'Ntilanea@fsworks.gov.za'; 'Groblerw@dws.gov.za'; 'mbatha.npz@sacr.fs.gov.za'; 'Rapudungoane@Eskom.co.za'; 'Mahlatse.Moeng@Eskom.co.za'
Subject: Notification regarding a Public Participation Process for the Proposed Dredging at a Weir near the De Put Dam, Senekal
Message
Notification E-mail 2021.11.09.pdf (188 KB)
Dear Possible and / or Interested Party
Please see the attached document for more information on the above mentioned project.
Trust that you will find the above in order.
Please do not hesitate to contact us should you require additional information on the said project.
Kind regards,
Hanlie Stander
Registered Environmental Assessment Practitioner: Number 2019/1997
mda
Town & Regional Planners,
Environmental & Development
Consultants
9 Barnes Street | Westdene | Bloemfontein | 9301
P.O. Box 100982 | Brandhof | 9324
Tel: 051 447 1583 | Fax: 051 448 9839
Sent Items - Outloo...
Notification regardi...
Hand Delivery 2021....
Appendix E1 - Micr...
Appendix E2 - Micr...
dBAR
10:56 AM

APPENDIX E_3

List of registered parties

The Proposed Dredging of a Weir, Senekal		
Table 2: List of registered parties		
Authorities & Stakeholders		
Organization	**Contact person and contact detail**	**Comments & Response**
Thabo Mofutsanyana District Municipality	The Municipal Manager Ms. Takatso Lebenya Tel: (058) 718 1036 / 1089 Fax: (058) 718 1034 Email: Takatso@Tmdm.Gov.Za Private Bag X810, Witsieshoek, 9870 1 Maimpoi Street, Old Parliament Building, Phuthaditjhaba	No comments received to date. No response from MDA.
Setsoto Local Municipality: Municipal Manager	Mr. Tshepiso "Sugar" Ramakarane Tel: (+27 51) 933 9302 Fax: (+27 51) 933 9363 Email: tshepiso@setsoto.co.za / manager@setsoto.co.za 27 Voortrekker Street, Ficksburg	No comments received to date. No response from MDA.
Setsoto Local Municipality: Ward Councillors: Wards 3 & 4	Ward 3: Cllr. Mamotena Lydia Mthimkulu Ward 4: Cllr.Mahlomola Relehlatsi P.O. Box 116, Ficksburg, 9730	No comments received to date. No response from MDA.
Department Of Agriculture	The Assistant Director Mr Jack Morton P.O. Box 34521 Faunasig Bloemfontein 9325 Surprisey Mathibela Department of Agriculture and Rural Development Private Bag X21 Bethlehem 9700 Surpriseymc@gmai.com	Mr Mathibela e-mailed MDA in order to register as an IAP. MDA will forward all relevant communiciation to Mr Mathibela in future.
Department Of Public Works: Property Manager	Department Of Land Affairs Director Property Management Of The Provincial Department Of Public Works & Infrastructure Ms Agnes Ntilane 136 Charlotte Mareka Street Bloemfontein	No comments received to date. No response from MDA.

The Proposed Dredging of a Weir, Senekal		
Table 2: List of registered parties		
	9300 Ntilanea@fsworks.gov.za	
Department Of Water And Sanitation	Mr. W Grobler Private Bag X528 Bloemfontein 9300 Groblerw@dws.gov.za	No comments received to date. No response from MDA.
SAHRA	South African Heritage Resources Agency (SAHRA) Head Office 111 Harrington Street Cape Town 8001	No comments received to date. No response from MDA.
SAHRA Free State	Ntando PZ Mbatha Heritage Coordinator Corner Henry And East Burger Street Department Of Sport Arts Culture And Recreation Office 204 Bloemfontein 9301	No comments received to date. No response from MDA.
Eskom	Phindi Rapudungoane Land And Rights Officer Tell: 051 4042284 Fax: 086 5398399 Phindi.Rapudungoane@Eskom.co.za Mahlatse Moeng Environmental Officer Land Development And Environment Eskom Distribution-FSOU Eskom Centre First Floor 120 Henry Street Westdene Bloemfontein Tel: 051 404 2287 Cell: 079 199 0679 Fax: 086 604 5709 Email: Mahlatse.Moeng@Eskom.co.za	No comments received to date. No response from MDA.

The Proposed Dredging of a Weir, Senekal		
Table 2: List of registered parties		
Adjacent Landowners		
Farm Name	**Contact Person Name and Address**	**Comments & Response**
Portion 1 of the farm Veepost 1172	Setsoto Local Municipality: Municipal Manager Mr. Tshepiso "Sugar" Ramakarane Tel: (+27 51) 933 9302 Fax: (+27 51) 933 9363 Email: tshepiso@setsoto.co.za / manager@setsoto.co.za 27 Voortrekker Street, Ficksburg	No comments received to date. No response from MDA.
Portion 2 of the farm Veepost 1172		
Portion 4 of the farm Veepost 1172		
Portion 5 of the farm Veepost 1172		
Portion 6 of the farm Veepost 1172		

APPENDIX E4

List of comments received

No comments received to date.

Any comments received during the PPP will be included in the fBAR.

APPENDIX E_5

Response to comments received

N/A as no comments received to date.
Any comments received during the PPP will be addressed in the fBAR.

APPENDIX E_6

Proof of submission of dBAR to registered parties

To be attached to fBAR.

APPENDIX F

Impact Assessment

IMPACT ASSESSMENT

The proposed dredging at a Weir near De Put Dam, Senekal, Free State

Proponent: Setsoto Local Municipality
MDA Ref No: 40884
Date: January 2022

Town & Regional Planners,
Environmental & Development
Consultants

Physical Address: 9 Barnes Street,
Westdene, Bloemfontein, 9301
Postal Address: PO Box 100982,
Brandhof, 9324
Tel: 051 4471583, Fax: 051 448 9839
E-mail: admin@mdagroup.co.za

1. METHODOLOGY

1.1. Impact assessment must take into account the nature, scale and duration of effects on the environment whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is also assessed according to the project stages from planning, through construction and operation to the decommissioning phase. Where necessary, the proposal for mitigation or optimization of an impact is noted. A brief discussion of the impact and the rationale behind the assessment of its significance has also been included.

1.2. A rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact. In assessing the significance of each issue the following criteria (including an allocated point system) is used:

Table: Criteria for the classification of an impact	
NATURE	
A brief description of the environmental aspect being impacted upon by a particular action or activity is presented.	
EXTENT (SCALE)	
Considering the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact.	
Site	Within the construction site
Local	Within a radius of 2 km of the construction site
Regional	Provincial (and parts of neighbouring provinces)
National	The whole of South Africa
DURATION	
Indicates what the lifetime of the impact will be.	
Short-term	The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase
Medium-term	The impact will last for the period of the construction phase, where after it will be entirely negated
Long-term	The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter

Table: Criteria for the classification of an impact	
Permanent	The only class of impact which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient
INTENSITY	
Describes whether an impact is destructive or benign.	
Low	Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.
	It is important to note that the status of an impact is assigned based on the status quo – i.e. should the project not proceed. Therefore not all negative impacts are equally significant.
Medium	Effected environment is altered, but natural and social functions and processes continue albeit in a modified way, cultural
High	Natural, cultural and social functions and processes are altered to extent that they temporarily cease
Very high	Natural, cultural and social functions and processes are altered to extent that they permanently cease
PROBABILITY	
Describes the likelihood of an impact actually occurring.	
Improbable	Likelihood of the impact materializing is very low
Possible	The impact may occur
Highly probable	Most likely that the impact will occur
Definite	Impact will certainly occur
SIGNIFICANCE	
Significance is determined through a synthesis of impact characteristics. It is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.	
Low impact	No permanent impact of significance. Mitigatory measures are feasible and are readily instituted as part of a standing design, construction or operating procedure
Medium impact	Mitigation is possible with additional design and construction inputs
High impact	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment

Table: Criteria for the classification of an impact	
Very high impact	The design of the site may be affected. Intensive remediation as needed during construction and/or operational phases. Any activity which results in a "very high impact" is likely to be a fatal flaw.
STATUS	
Denotes the perceived effect of the impact on the affected area.	
Positive	Beneficial impact
Negative	Deleterious or adverse impact
Neutral	Impact is neither beneficial nor adverse

The suitability and feasibility of all proposed mitigation measures will be included in the assessment of significant impacts. This will be achieved through the comparison of the significance of the impact before and after the proposed mitigation measure is implemented.

DESCRIPTION AND ADDRESSING OF POSSIBLE IMPACTS, ISSUES AND CUMULATIVE IMPACTS

Developments such as these do have, like many other types of developments, various direct but also indirect impacts on the environment. These impacts have to be managed in order to have the minimum environmental impact and the maximum benefit to man.

Issues identified during the Basic Assessment process are discussed and assessed below:

1. VEGETATION DESTRUCTION						
Assessment						
Mitigation Status	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**
Without Mitigation	Local	Permanent	Very high	Definite	High	Negative
With Mitigation	Site	Long term	High	Definite	Medium	Negative
Recommendation						
Phase	**Description of recommendation**					
General	• Please refer to the Specialist Reports in Appendix D for more recommendations					
Planning Phase	• None					
Construction phase and operational phase	• Establishment of alien / invader vegetation will be monitored and these species will be removed by hand or by an approved chemical before gestation thereof. • Vegetation clearance will be limited to the required area. • A permit for the removal of protected plant species will be obtained before the removal of these species (if any). • Care should be taken to limit unnecessary destruction of the natural vegetation. • All human movement and activities must be contained within designated construction areas and the planned site access road in order to prevent peripheral impacts on surrounding natural habitat. • No fire-wood may be collected in the veld without permission from the landowner. • Alien control and monitoring programme must be developed. • Visual inspections should be undertaken regularly to ensure environmental compliance. • If erosion is evident, proper erosion control measures should be implemented as soon as possible. • No littering may be allowed and all litter must be removed from the site. • Monitoring of dredging and compliance with recommended mitigation measures must take place. • The necessary authorisations must be acquired from Department of Water and Sanitation (DWS) for the proposed dredging operations in the Sandspruit. • Surrounding natural vegetation still consist of Eastern Free State Clay Grassland, a Threatened Ecosystem, which should therefore be avoided by the proposed dredging operations. This is particularly applicable to the western banks and surrounding areas to the west of the river.					

1. VEGETATION DESTRUCTION	
	• Although the area is somewhat modified it was notable that along the banks of the Sandspruit, several specimens of the protected *Crinum bulbispermum* occurs: Dredging operations including any associated disturbance should avoid the natural vegetation along the western banks of the river in order to minimise the impact on these plants. • Should any specimens require removal for the dredging operations, the necessary permits will have to be obtained to do so. Any removed specimens should be transplanted to an adjacent area where it will remain unaffected. • The extent of dredging in the main channel of the Sandspruit should preferably be limited to, immediately upstream of the weir and to a maximum section of 100 meters upstream of the weir. • Avoiding the western bank of the river completely and also retaining the floodplain and associated wetland areas intact (these areas occurring between the main channel and the toe of the damwall). • Avoiding the removal of vegetation as far as possible and avoiding the removal of vegetation outside the main channel completely. • Undertaking of dredging should be limited to winter months (May to September) when dredging operations will be least likely to be affected by flooding and disturbance will also be limited. • Vehicles will have to access the main channel. This should be limited to a single access road into and out of the main channel. • Excavated sediment should be removed from the area and disposed of or used in agricultural activities and should not be stockpiled at the site. • Following the dredging operations, any disturbance of the banks, vegetation or wetland areas should be rehabilitated. It is important that riparian vegetation be re-established where they were removed. This can be attained by removing sods of the indigenous sedges and grasses as listed for the river and replanting these in disturbed areas • Areas where dredging and disturbance takes place is normally susceptible to the establishment of exotic weeds and invaders. It will therefore be important to monitor and eradicate any invasive weeds. • A comprehensive monitoring and rehabilitation programme should be initiated, which should be

1. VEGETATION DESTRUCTION	
	maintained at least for the duration of dredging, when impacts are anticipated to be most significant.
Post construction phase and rehabilitation phase	• The alien control and monitoring programme used during the construction and operational phase must be carried over into the post construction and rehabilitation phase. • Erosion should be prevented as far as possible and attended to, as serious erosion may occur at barren areas. • Return and spread topsoil cover (to original depth) over rehabilitated area. • Vegetation should be allowed to re-establish naturally over disturbed area to be rehabilitated. • Areas which show no vegetation growth nine months after completion of the rehabilitation work, must be ripped, additional topsoil spread and seeded with indigenous grass species. • Species, especially grasses, trees and shrubs occurring in the region must be used to rehabilitate disturbed areas. • Keep animals away from the site, at least until the vegetation has re-established sufficiently.

2. LOSS OF SOIL						
Assessment						
Mitigation Status	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**
Without Mitigation	Regional	Permanent	Medium	Definite	High	Negative
With Mitigation	Local	Long-term	Medium	Definite	Medium	Negative
Recommendation						
Phase	**Description of recommendation**					
General	• Please refer to the Specialist Reports in Appendix D for more recommendations					
Planning Phase	• No environmental mitigation measures is required during the planning phase on the proposed site, as no mitigation measures are to be implemented on site during the planning phase. • However, the engineers, specialists and environmental consultants took various factors into consideration, to be implemented during the construction / operational phase.					
Construction phase and operational phase	• Store stripped topsoil in an approved location and in an approved manner for later re-use in the rehabilitation process, for example: - Bricks may be placed around the stockpiles, to limit the loss thereof due to rainy events. - Stockpiles should not be higher than 1.5 m. - The gradient of stockpiles should not be greater than 1:1.5. • Speed limit will be enforced on the construction vehicles and these vehicles will only make use of designated roads / pathways. • Dust control measures will be implemented if nuisance dust generation occurs during the construction period. • All human movement and activities must be contained within designated construction areas and the planned site access road in order to prevent peripheral impacts on surrounding natural habitat. • Visual inspections should be undertaken regularly to ensure environmental compliance. • Storm water measures will be implemented in order to manage storm water and this will also prevent erosion. • Visual inspections for the occurrence of erosion should be undertaken on a weekly basis during the construction phase. • If erosion is evident, proper erosion control measures should be implemented as soon as possible.					

2. LOSS OF SOIL	
Post construction phase and rehabilitation phase	• Erosion should be prevented as far as possible and attended to, as serious erosion may occur at barren areas. • Return and spread topsoil cover (to original depth) over rehabilitated area. • Vegetation should be allowed to re-establish naturally over disturbed area to be rehabilitated. • Best Practices should be implemented at areas which show no vegetation growth nine months after completion of the rehabilitation work, where applicable.

3. POLLUTION CONTROL						
Assessment						
Mitigation Status	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**
Without Mitigation	Regional	Permanent	High	Definite	High	Negative
With Mitigation	Local	Long-term	Medium	Definite	Medium	Negative
Recommendation						
Phase	**Description of recommendation**					
General	• Please refer to the Specialist Reports in Appendix D for more recommendations					
Planning Phase	• No environmental mitigation measures is required during the planning phase on the proposed site, as no mitigation measures are to be implemented on site during the planning phase. • However, the engineers, specialists and environmental consultants took various factors into consideration, to be implemented during the construction / operational phase.					
Construction phase and operational phase	• Visual inspections for the occurrence of pollution should be undertaken daily during the construction (dredging at the weir) phase. • Best practices should be implemented in the case of spillages / pollution / erosion. • No waste (general / construction / potential hazardous / etc.) may be dumped in the veld / water features. • Waste classification should be undertaken. • Suitable waste bins etc. will be available on site for the temporary disposal of waste. • Waste will be removed from site and disposed of at an authorised landfill site. • DWS should be notified of any spillage / pollution within 24 hours of occurrence within water resources. • Record should be kept on site to indicate date of visual inspection, any spillages observed, and manner in which spill was treated. • Proper erosion mitigation measures should be implemented.					
Post construction phase and rehabilitation phase	• Maintenance and repair will be undertaken when necessary. • All temporary infrastructure related to the construction phase (dredging at the weir) will be removed from site. • Temporary concrete surfaces (if any) will be removed and compacted areas rehabilitated according to Best Practices.					

3. POLLUTION CONTROL	
	• No waste will be dumped on site and any waste occurring on site will be removed and disposed of according to best practices.

4. LOSS OF ANIMAL LIFE						
Assessment						
Mitigation Status	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**
Without Mitigation	Local	Permanent	Medium	Definite	High	Negative
With Mitigation	Local	Long-term	Medium	Definite	Medium	Neutral
Recommendation						
Phase	**Description of recommendation**					
General	• Please refer to the Specialist Reports in Appendix D for more recommendations					
Planning Phase	• No environmental mitigation measures is required during the planning phase on the proposed site, as no mitigation measures are to be implemented on site during the planning phase. • However, the engineers, specialists and environmental consultants took various factors into consideration, to be implemented during the construction / operational phase.					
Construction phase and operational phase	• No animals may be captured / harmed / killed on site. • Specialists should be appointed to remove / translocate species, if required. The necessary permits should also be obtained. • Any occurrences of harmed animals should be reported to the ECO, the required steps should be taken and should be recorded as such.					
Post construction phase and rehabilitation phase	• No animals may be captured / harmed / killed on site. • Specialists should be appointed to remove / translocate species, if required. The necessary permits should also be obtained. • Any occurrences of harmed animals should be reported to the ECO, the required steps should be taken and should be recorded as such.					

5. Surface Water						
Assessment						
Mitigation Status	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**
Without Mitigation	Regional	Permanent	Medium	Definite	High	Negative
With Mitigation	Local	Long-term	Medium	Definite	Medium	Neutral
Recommendation						
Phase	**Description of recommendation**					
General	• Please refer to the Specialist Reports in Appendix D for more recommendations					
Planning Phase	• No environmental mitigation measures is required during the planning phase on the proposed site, as no mitigation measures are to be implemented on site during the planning phase. • However, the engineers, specialists and environmental consultants took various factors into consideration, to be implemented during the construction / operational phase.					
Construction phase and operational phase	• Storm water measures will be implemented in order to manage storm water and this will also prevent / limit erosion. • The necessary authorisations (altering and impeding of beds / banks of water sources) should be obtained from DWS. • Daily inspections for the occurrence of surface water - and soil pollution are to be undertaken, during the construction phase. • Best practices should be implemented in the case of spillages / pollution / erosion at the waterways. • Best practices should be implemented to rehabilitate wetlands, where required.					
Post construction phase and rehabilitation phase	• Disturbed waterways should be rehabilitated according to best practices. • All polluted areas should be cleaned as soon as possible. • Waste to be removed from site.					

6. VISUAL IMPACT

The visual impact of the proposed development in the landscape is the function of several factors of which the viewing distance, visual absorption capacity and landform are measurable. Other factors are difficult to categorize because they are subjective viewpoints.

The visual impact for the proposed development is largely due to:
- The topography in terms of elevation and aspect;
- The vegetative cover in terms of its extent and height;
- The extent of the proposed development;
- Distance from point of origin; and
- The low visual absorption capacity of the surrounding landscape.

Factors of visual impact

Visual character:
The visual character of an area has different elements that provide an overall perceived ambience. In the consideration of the visual character of a site, it is important to include not only the internal land use but that of the surrounding land as well.

At this site, the visual character is mainly the town of Senekal, agricultural area adjacent to the town of Botshabelo, as well as the existing De Put Dam and its associated infrastructures that are located within viewing distance of the site.

Scale of landscape:
Visual scale is the apparent size relationships between landscape components and their surroundings (Smardon, et al. 1986).

Visual analysis:
In this section the intensity of the visual impact of the development on the surrounding area is described. Aspects such as viewshed, visual absorption capacity and the appearance of the development from critical viewpoints will be used to determine this impact.

According to Mucina & Rutherford (2006) the area consists of Eastern Free State Clay Grassland (Gm 3). The vegetation type is listed as being Vulnerable (VU) and therefore a Threatened Ecosystem according to the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004). It is affected by transformation as a result of crop cultivation, urban areas and dam construction and therefore listed as a Threatened Ecosystem. Portions of the vegetation type around the site have been transformed by dam construction and the current construction of new abstraction infrastructure. The majority of the surrounding is still natural though also affected by high levels of communal overgrazing by domestic livestock.

The weir, off-channel dam and extraction point all contribute to some modification of the system though it is evident that extensive wetland areas are also associated with the river here, both historically and currently.

The areas surrounding the dredging site is still largely natural though has been affected by several land uses. Areas around the Sandspruit are also disturbed due to the current construction of a new extraction point in the river. Overgrazing by domestic livestock also cause significant modification of the remaining natural vegetation.

The topography of the site and surroundings are dominated by undulating plains with low ridges, formed by sandstone outcrops. The site itself is being dominated by the Sandspruit, main channel, associated wetlands and floodplain. The Sandspruit, especially upstream of the weir, forms an extensive wetland area. This may have been modified by continuous sediment deposition, though historical images indicate that wetland conditions were already quite extensive, prior to the construction of the weir. The topography to the east of the weir is quite modified by the existing De Put Dam as well as the current construction operations.

The surrounding area still consists largely of natural vegetation but which has been modified to a significant extent by the existing De Put Dam and overgrazing by domestic livestock.

Site evaluation in terms of visual impact

Visual assessment ratings rates each criterion listed in the table from, high, medium to low according to specific characteristics of those criteria.

Visual assessment criteria used to determine the degree of visual impact of the proposed activities on the environment (adapted from Klapwijk 1998)			
CRITERIA	**HIGH**	**MEDIUM**	**LOW**
Visibility	Very visible from many places beyond 1km	Visible from within 1km zone but partially obscured by intervening objects	Only partially visible within the 1km zone and beyond due to screening by intervening objects
Visual quality	A very attractive setting	A setting with some aesthetic and visual merit	A setting which has little aesthetic merit
Visible man-made structures	Buildings as a dominant visual element	Buildings as a partial visual element	Buildings as a minor visual element
Surrounding landscape compatibility	Cannot accommodate proposed development without appearing totally out of place.	Can accommodate the proposed development without appearing totally out of place	Usually suits or matches the proposed development
Character of site or surrounding area	Exhibits a definite character	Exhibits some character	Little or no character
Contrast between human scale and vertical & horizontal elements in the landscape	There is high contrast	Landscape with some contrast	Limited vertical variation. Most elements are related to human and horizontal scale
Visual absorption capacity (VAC)	Inability of landscape to visually absorb a development because of a limited vegetation cover, flat slope and uniform	The lower ability of the landscape to visually absorb the development due to less diverse landform, vegetation & texture	The ability of landscape to easily accept visually a particular development because of its diverse landform,

Visual assessment criteria used to determine the degree of visual impact of the proposed activities on the environment (adapted from Klapwijk 1998)			
CRITERIA	**HIGH**	**MEDIUM**	**LOW**
	texture		vegetation and texture
View distance (uninterrupted)	More than 5km	Between 5km & 1km	Between 1km & 500m
Critical views	Views of the development are to be seen by many people passing on road routes and from prominent areas	Some views of the development from surrounding routes and housing	Limited views to the development from roads and housing

Results and conclusions on visual impact of development assessment

Aspect	Result
Visibility	MEDIUM TO LOW
Visual quality	MEDIUM
Visible man-made structures	MEDIUM
Surrounding landscape compatibility	MEDIUM
Character of site or surrounding area	MEDIUM
Contrast between human scale, vertical & horizontal elements in the landscape	MEDIUM
Visual absorption capacity (VAC)	MEDIUM
View distance (uninterrupted)	MEDIUM
Critical views	MEDIUM

The proposed development will have a medium visual impact. This is largely due to:

- The extent of the development
- The surrounding agricultural as well as residential areas, the locality of the existing weir, the De Put Dam and its associated infrastructures

APPENDIX G

Environmental Management Programme (EMPr)

ENVIRONMENTAL MANAGEMENT PROGRAMME

The proposed dredging at a Weir near De Put Dam, Senekal, Free State

Proponent: Setsoto Local Municipality
MDA Ref No: 40884
Date: January 2022

Town & Regional Planners,
Environmental & Development
Consultants

Physical Address: 9 Barnes Street,
Westdene, Bloemfontein, 9301
Postal Address: PO Box 100982,
Brandhof, 9324
Tel: 051 4471583, Fax: 051 448 9839
E-mail: admin@mdagroup.co.za

1. INTRODUCTION

1.1 Project and associated construction activities

The proposed project entails the proposed dredging of material at a weir near the De Put Dam, Senekal.

Please refer to the map in Appendix A of the Basic Assessment Report for an indication on the locality of the proposed activities.

1.1 Objectives of the EMPr

The EMPr aims to fulfil the requirements in terms of the National Environmental Management Act (Act 107 of 1998), with the following objectives:

- To identify, predict and evaluate actual and potential impacts on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management;
- To identify and employ the modes of environmental management best suited to ensuring that the activity is pursued in accordance with best environmental management practices;
- To be able to respond to unforeseen events; and
- To provide feedback on compliance.

1.2 Implementation of the EMPr

The proponent, namely Mangaung Metropolitan Municipality is responsible for the implementation of the EMPr. All contractors should be supplied with a copy of the EMPr and should ensure that construction staff adheres to the mitigation measures.

2. PREPARATION OF THE EMPR

2.1 Person(s) who prepared the EMPr

i) Mr Neil Devenish
ii) Me Hanlie Stander

MDA
P.O. Box 100982
Brandhof

Bloemfontein
9324
Tel: 051 447 1583
Fax: 051 448 9839

2.2 Expertise of the person(s) who prepared the EMPr

i) Mr Neil Devenish

Key qualifications:
- Key competencies and experience include development control applications (applications and appeals pertaining to rezoning, consolidations, subdivisions etc.) township establishment applications, environmental management and control applications.

Education:
- B. A. (Sociology, Geography) University of the Free State, SA, 1994
- Master of Town and Regional Planning, University of the Free State, SA, 1996
- Managing the Environmental Impact Assessment Process, Environmental Management Unit, PU for CHE, 2000
- Environmental Management Consulting, South African Institute of Ecologists & Environmental Scientists, 2001
- Water Law of South Africa, The South African Institution of Civil Engineers (SAICE), 2006

ii) Me Hanlie Stander

Key qualifications:
- Key competencies and experience include environmental management and research in zoology and environmental management.

Education:
- B.Sc. (Zoology), University of the Free State, South Africa, 2005
- B.Sc. Honors (Zoology), University of the Free State, South Africa, 2006
- M.Sc. (Zoology), University of the Free State, South Africa, 2012

3. RECOMMENDED MANAGEMENT AND MITIGATION MEASURES

ECO - Environmental Control Officer / IECO - Independent Environmental Control Officer

Compliance and Monitoring					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
Record keeping of compliance and monitoring reports	1. The applicant will ensure that the contractors adhere to the recommendations of the EMPr and conditions of the Environmental Authorisation during construction.	Applicant / Contractor	Contractor / ECO / Applicant	On-going	During planning, construction and rehabilitation phase
	2. An Environmental Control Officer (ECO) will be appointed to monitor the construction phase. Note that the ECO may be appointed separately or can be part of the contractor's team.	ECO / Contractor	IECO	On-going	During construction and rehabilitation phase
	3. Regular monitoring and / or spot inspections at least every fortnight during the construction phase is recommended.	ECO / Contractor	ECO/ IECO	On-going	During construction and rehabilitation phase
	4. Inspections should be documented and any shortcomings addressed immediately.	ECO / Contractor	ECO/ IECO	On-going	At all phases

Compliance and Monitoring					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	5. A report will be provided by the independent ECO to the contractor upon completion thereof. The findings thereof should be made available to the competent authority (for example DESTEA, DWS), should it be requested.	IECO / Contractor	ECO/ DESTEA / DWS	On-going	At all phases
	6. Any emergency or unforeseen impact will be reported to the relevant environmental department / DWS within 24 hours after identification for telephonic approval and will be confirmed in writing.	ECO / Contractor	ECO/ IECO / DWS / DESTEA	On-going	At all phases
	7. The rehabilitated area (previously disturbed area) must be routinely audited and Best Practices implemented, where required (e.g. should erosion be evident / the re-establishment of vegetation not be sufficient).	Applicant	DWS / DESTEA	On-going	During operational phase
	8. Material Safety Data Sheets (MSDS) should be available on site. Where possible and available, MSDS should include information on ecological impacts and measures to minimize negative environmental impacts during accidental	ECO / Contractor	ECO/ IECO / DWS / DESTEA	On-going	During construction and rehabilitation phase

Compliance and Monitoring					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	releases or escapes.				
	9. Procedures in the MSDS should be implemented in case of an emergency	ECO / Contractor	ECO/ IECO / DWS / DESTEA	On-going	During construction and rehabilitation phase
	10. The following documents should be available on site, and made available to the competent authority on request (if applicable): - Complaints Register - Environmental Incident Register - Disposal Certificates of waste generated as a result of the construction activities. - Environmental Monitoring (Audit) Reports - Written Corrective Action Instructions - Environmental Authorisation - DWS Permit / License - Blasting Permit - EMPr	ECO / Contractor	ECO/ IECO / DWS / DESTEA	On-going	During construction and rehabilitation phase

Planning and Design phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
Planning and design NOTE: Should the following aspects not be taken into consideration during the Planning and Design Phase, the environmental impacts associated with the construction and operation phase will be	1. No environmental mitigation measures are required during the planning phase on the proposed site, as no mitigation measures are to be implemented on site during the planning phase.	Applicant / Engineers / Environmental Consultant / Contractor	Applicant	On-going	During planning and design phase
	2. The design and layout of the proposed project will take the possibility of flooding, erosion and pollution into consideration	Applicant / Engineers / Environmental Consultant / Contractor	Applicant	On-going	During planning and design phase
	3. The applicant, engineers, environmental consultants and specialists should take the following steps during the planning phase: - Permits will be obtained for the removal / transplantation of protected species (if any) that are located within the construction area where no alternatives are possible.	Applicant / Engineers / Environmental Consultant / Contractor	Applicant	On-going	During planning and design phase

Planning and Design phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
of high significance as the environment will be negatively affected.	- A monitoring system should be implemented to determine the occurrence (if any) of any fuel / oil spillages during the construction phase. - The necessary Environmental Authorisation will be obtained before any activities listed in the Regulations are undertaken. - In addition, the necessary DWS registrations will be obtained, before any construction activities near watercourses are undertaken. - The necessary precautions with regard to road safety will be implemented for construction work to be undertaken within road crossings (if any). - Proper sanitation, potable water and waste facilities will be in place before construction activities are undertaken. - A blasting permit will be obtained before blasting activities is undertaken (if any).				

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
General measures to consider	1. Any construction is disruptive and the environment must be given consideration with every activity undertaken	Contractor	ECO / IECO	On-going	During construction phase
	2. All relevant standards relating to legislation should be adhered to (including waste emissions, waste disposal, noise regulations, etc.)	Contractor	ECO / IECO	On-going	During construction phase
	3. According to Section 28 of the NEMA Act 107, every person who cause, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring and if it can't be avoided or stopped, to minimize and rectify such pollution or degradation of the environment.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	4. The pollution control provision in Section 19(1) of the National Water Act (Act 36 of 1998) should be adhered to at all times.	Contractor	ECO / IECO	On-going	During construction phase
	5. ECO should be provided with a layout of the site, indicating the position of the following prior to the site establishment, for acceptance: - Ablution Facilities - Storage Areas - Ready-mix Areas - Stockpile Areas - Waste Disposal Facilities - Hazardous Substances Storage Area - Etc.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	6. Designate the boundaries of the active construction start-up site, by erecting fencing / danger tape (where applicable)	Contractor	ECO / IECO	On-going	During construction phase
	7. Fence off operational footprint area (if possible) to ensure all operational activities are contained within the designate area.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	8. All construction and operational activities must be contained within the demarcated area determined in consultation with the ECO.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	9. Care will be taken to prevent unnecessary damage to vegetation near to construction activities.	Contractor	ECO / IECO	On-going	During construction phase
	10. The necessary precautions with regard to road safety will be implemented for construction work within road crossings (if any).	Contractor	ECO / IECO	On-going	During construction phase
	11. Proper sanitation, water and waste facilities will be in place for construction workers throughout the construction phase.	Contractor	ECO / IECO	On-going	During construction phase
	12. Chemical toilets will be cleaned and serviced regularly and proof thereof will be available on site.	Contractor	ECO / IECO	On-going	During construction phase
	13. Potable water will be made available daily to workers on site.	Contractor	ECO / IECO	On-going	During construction phase
	14. Fire-fighting equipment will be available on site, where applicable.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	15. If artefacts or graves are uncovered during construction activities, work in the immediate vicinity will be stopped until the project Archaeologist and SAHRA has been consulted.	Contractor	ECO / IECO	On-going	During construction phase
	16. Adjacent landowners will be notified of proposed blasting, 24 hours prior to blasting activities.	Contractor	ECO / IECO	On-going	During construction phase
Site access	1. Necessary drawings for the upgrading of intersections (if any) are to be submitted to the relevant authority (SANRAL / Provincial Department of Roads / Municipality's Department of Roads) for approval, and the upgrades are to be implemented	Applicant / Contractor	ECO / IECO	On-going	During construction phase
	2. The current access road should be improved, when required	Contractor	ECO / IECO	On-going	During construction phase
	3. Proper storm water measures are to be implemented to avoid run-off of water and washing of sand / soil onto the road	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	4. Erosion measures will be implemented	Contractor	ECO / IECO	On-going	During construction phase
	5. Removal of vegetation will be kept to the required area	Contractor	ECO / IECO	On-going	During construction phase
	6. No animals will be hunted / captured on site (only to be undertaken by a relevant specialist)	Contractor / ECO	ECO / IECO	On-going	During construction phase
Employee conduct on site	1. No animals may be harmed / captured / trapped and / or hunted. This must be strictly enforced.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	2. Animals found at the construction site will be removed and relocated to an appropriate area, by a suitable, qualified person	Contractor / ECO	ECO / IECO	On-going	During construction phase
	3. No open fires allowed. Provision will be made that no accidental fires are started.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	4. No firewood will be collected on site or in surrounding areas, without written approval from the landowner.	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	5. No smoking or open fires will be allowed near storage facilities	Contractor / ECO	ECO / IECO	On-going	During construction phase
	6. No waste may be dumped on site	Contractor / ECO	ECO / IECO	On-going	During construction phase
	7. Employees should make use of the ablution facilities provided	Contractor / ECO	ECO / IECO	On-going	During construction phase
Soil, erosion and vegetation management	1. Construction activities will be limited to designated construction areas to prevent peripheral impacts on surrounding natural habitats. Construction vehicles will also keep to constructed roads where possible, so that natural vegetation is not destroyed unnecessarily.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	2. Access roads or temporary crossings must be non-erosive, structurally stable and not induce flooding / safety hazard.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	3. If any access road or temporary crossing is impaired, it will be repaired immediately to prevent any future /	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	further damage.				
	4. All human movement and activities will be contained within designated construction areas in order to prevent peripheral impacts on surrounding natural habitat.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	5. Erosion management is important. Rehabilitation measures must be monitored to ensure that no erosion has occurred and the disturbed areas have been adequately re-vegetated.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	6. Concurrent rehabilitation of disturbed areas will be undertaken to help the recovery of the vegetation.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	7. Stockpiled soil to be used for the rehabilitation of the disturbed area will be stockpiled in an area where it will not be disturbed by vehicles.	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	8. Stockpiled soil will be protected from washing away during rainstorms. For example: - One layer of bricks or stones can be placed around the stockpiled topsoil. - Bricks may be placed around the stockpiles, to limit the loss thereof due to rainy events. - Stockpiles should not be higher than 1.5 m. - The gradient of stockpiles should not be greater than 1:1.5.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	9. Stockpiles should be located away from drainage lines, watercourses and areas of temporary flood	Contractor / ECO	ECO / IECO	On-going	During construction phase
	10. All soil excavated and not to be removed from the site, is to be separated into top- and subsoil. Stockpiled subsoil must be used for backfilling and stockpiled topsoil for landscaping and rehabilitation of disturbed areas	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	11. Stockpiled material not to be removed from the site will be placed on the cleared areas once construction is completed. Re-spreading of topsoil is preferably to be done to the natural level.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	12. Fertilisers should be used where topsoil and subsoil was mixed or where the topsoil is not up to original standard	Contractor / ECO	ECO / IECO	On-going	During construction phase
	13. Indigenous tree species in the vicinity of the operational site (if any) should be marked with danger tape. Disturbance to such species should be avoided, where possible.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	14. A permit for the removal of protected plant species will be obtained before the removal of these species (if any).	Applicant / Contractor	ECO / IECO	On-going	During construction phase
	15. An alien control and monitoring programme will be developed starting during the construction phase and will be carried over into the operational phase.	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	16. Any proclaimed weed or alien species that germinates during the contract period will be cleared by hand / approved chemicals before flowering thereof.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	17. Imported fill material will be monitored during and after construction for the presence of any alien species. Any such species will be removed immediately.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	18. Fire fighting equipment will be available on site.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	19. Species, especially grasses, trees and shrubs occurring in the region will be used to rehabilitate disturbed areas.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	20. Compacted soils (such as dirt tracks not to be utilised during the operational phase) must be ripped to ensure the establishment of natural occurring vegetation.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	21. Should natural re-growth not be sufficient, the area should be hydro-seeded.	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	22. Concurrent rehabilitation should be undertaken, where possible.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	23. Vegetation clearance will be limited to the required area.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	24. Speed limit will be enforced on the construction vehicles and these vehicles will only make use of designated roads / pathways.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	25. Dust control measures will be implemented if nuisance dust generation occurs during the construction period.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	26. All archaeological findings (if any) should be recorded and reported to SAHRA. No construction activities in the area may proceed without the authorisation from SAHRA.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	27. Storm water measures will be implemented in order to manage storm water and this will also prevent erosion.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	28. Visual inspections for the occurrence of erosion should be undertaken on a	Contractor / ECO	ECO / IECO	On-going	During construction

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	weekly basis.				phase
	29. No animals may be captured / harmed / killed on site.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	30. Any occurrences of harmed animals should be reported to the ECO and recorded as such.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	31. Although the area is somewhat modified it was notable that along the banks of the Sandspruit, several specimens of the protected *Crinum bulbispermum* occurs: - Dredging operations including any associated disturbance should avoid the natural vegetation along the western banks of the river in order to minimise the impact on these plants. - Should any specimens require removal for the dredging operations, the necessary permits will have to be obtained to do so. Any removed specimens should be transplanted to	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	an adjacent area where it will remain unaffected.				
	32. Additional mitigation which should be considered in order to decrease the impact that dredging operations will on the Sandspruit include: - Limiting the extent of dredging the main channel of the Sandspruit, immediately upstream of the weir, and to a maximum section of 250 meters upstream of the weir. - Avoiding the western bank of the river completely and also retaining the floodplain and associated wetland areas intact (these areas occurring between the main channel and the toe of the dam wall). - Avoiding the removal of vegetation as far as possible and avoiding the removal of vegetation outside the main channel completely.				
	33. Undertaking of dredging should be limited to winter months (May to September) when dredging operations will be least likely to be affected by				

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	flooding and disturbance will also be limited.				
	34. Vehicles will have to access the main channel. This should be limited to a single access road into and out of the main channel.				
	35. Excavated sediment should be removed from the area and disposed of or used in agricultural activities and should not be stockpiled at the site.				
	36. Following the dredging operations, any disturbance of the banks, vegetation or wetland areas should be rehabilitated. It is important that riparian vegetation be re-established where they were removed. This can be attained by removing sods of the indigenous sedges and grasses as listed for the river and replanting these in disturbed areas				
	37. Areas where dredging and disturbance takes place is normally susceptible to the establishment of exotic weeds and invaders. It will therefore be important				

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	to monitor and eradicate any invasive weeds.				
	38. A comprehensive monitoring and rehabilitation programme should be initiated, which should be maintained at least for the duration of dredging, when impacts are anticipated to be most significant.				
	39. Given the significant extent of dredging (1.1. hectares) additional monitoring should include monthly monitoring of sediment release upstream, at the site and downstream in order to determine the extent to which dredging is causing sedimentation which should also allow for remediation where high impacts are observed.				
	40. Biomonitoring should be conducted at least every three months and should include indices such as WET-Health and SASS5 or a combination thereof.				

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
Minimise contamination and sterilisation of soil	1. Use of potentially polluting and hazardous substances should be strictly controlled	Contractor / ECO	ECO / IECO	On-going	During construction phase
	2. If soil is significantly contaminated by hazardous substances, then this soil is considered as hazardous and should be disposed of according to best practices	Contractor / ECO	ECO / IECO	On-going	During construction phase
	3. Minor vehicle repair / maintenance will be conducted on site, and impacts like oil spills should be appropriately mitigated. Spill response procedures must be clearly defined and well known by all staff.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	4. All threatened or protected plant species as specified by the NEM: Biodiversity Act (2004) will be identified on site. Permits are required for the removal / transplantation of these plants.	Contractor / ECO	ECO / IECO	On-going	During construction phase
Trenching, placing of infrastructure	1. Site will be kept neat and tidy.	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
and levelling (if any)	2. Appropriate area will be identified as a stockpiling area.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	3. Speed limit will be enforced on the construction vehicles and these vehicles will only make use of designated roads / pathways.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	4. Dust control measures will be implemented if nuisance dust generation occurs during the construction period.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	5. Stockpiled material will be stored in such a way to limit the loss thereof. For example: - Bricks may be placed around the stockpiles, to limit the loss thereof due to rainy events. - Stockpiles should not be higher than 1.5 m. - The gradient of stockpiles should not be greater than 1:1.5.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	6. Noise control measures will be implemented.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	7. All employees will be provided with the correct PPE.	Contractor	ECO / IECO	On-going	During construction phase
	8. Establishment of alien / invader vegetation will be monitored and these species will be removed by hand or by an approved chemical before gestation thereof.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	9. All archaeological findings (if any) should be recorded and reported to SAHRA. No construction activities in the area may proceed without the authorisation from SAHRA.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	10. Storm water measures will be implemented in order to manage storm water and this will also prevent erosion.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	11. Visual inspections for the occurrence of erosion should be undertaken on a weekly basis.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	12. No animals may be captured / harmed / killed on site.	Contractor	ECO / IECO	On-going	During construction phase
	13. Any occurrences of harmed animals should be reported to the ECO and	Contractor	ECO / IECO	On-going	During construction

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	recorded as such.				phase
Ablution Facilities	1. No open areas or the surrounding vegetation may be used as 'toilet facilities'.	Contractor	ECO / IECO	On-going	During construction phase
	2. Toilets should be available for all employees. Where waterborne sewerage is not available, the ECO must designate an area within the boundaries of the site for the erection of portable chemical toilets.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	3. Toilet facilities shall occur at a minimum ration of 1 toilet per 15 employees.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	4. Toilets shall be maintained in a hygienic state and serviced when required.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	5. Temporary toilets should be serviced regularly and the contents be removed to a licensed disposal facility.	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
Safeguard water resources	1. No activities will be undertaken within 32 m of a watercourse / within the 1:100 year floodline / 500m of a wetland, without the necessary authorisations (for example from DESTEA and DWS).	Contractor / ECO	IECO / DWS / DESTEA	On-going	During construction phase
	2. Caution will be taken to ensure that construction materials are not dumped or stored within storm water management systems.	Contractor / ECO	IECO / DWS / DESTEA	On-going	During construction phase
	3. Construction activities in the storm water infrastructure will be limited through proper demarcation and appropriate environmental awareness training.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	4. The Contractor is responsible to inform all staff of the need to be vigilant against any practice that will have a harmful effect on waterways.	Contractor	ECO / IECO	On-going	During construction phase
	5. Infilling, excavation, drainage and hardening of surfaces will not occur unnecessarily in storm water infrastructure.	Contractor	ECO / IECO	On-going	During construction phase
	6. Emergency plans will be in place in case of fuel spillages (to limit the occurrence	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	of soil as well as groundwater pollution).				
	7. A monitoring system should be implemented to determine the occurrence (if any) of any fuel / oil spillages during the construction phase.	Contractor	ECO / IECO	On-going	During construction phase
	8. The necessary mitigation measures should be implemented immediately, should any leakages / spills be detected.	Contractor	ECO / IECO	On-going	During construction phase
	9. Weather forecasts from the South African Weather Bureau of up to three days in advance will be monitored on a daily basis to avoid exposing soil or construction works or materials during a storm event and appropriate action will be taken in advance to protect construction works should a storm event be forecasted.	Contractor	ECO / IECO	On-going	During construction phase
	10. All no-go areas will be demarcated under guidance of the Environmental Control Officer (ECO).	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	11. The design of drainage systems will ensure that there is no contamination or eutrophication. Drainage systems will be maintained regularly in order to minimize the runoff of harmful chemical substances into the waterway(s).	Contractor	ECO / IECO	On-going	During construction phase
	12. It will be ensured that the construction activities have minimal effects on the flow of water through the storm water infrastructure.	Contractor	ECO / IECO	On-going	During construction phase
	13. No erosion or siltation may occur due to any construction or operational activities.	Contractor	ECO / IECO	On-going	During construction phase
	14. Construction and operational activities should take the wetland boundaries and associated buffer zones into consideration (if any).	Contractor	ECO / IECO	On-going	During construction phase
	15. Occurrence of erosion will be monitored. Reparations will be undertaken as soon as possible.	Contractor	ECO / IECO	On-going	During construction phase
Workings within / near to	1. Storm water measures will be implemented in order to manage storm water and this will also prevent erosion.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
watercourses	2. Construction activities in waterways should be undertaken in such a manner that no containment of water is required, where possible.	Contractor	ECO / IECO	On-going	During construction phase
	3. The necessary authorisations should be obtained from DWS, should the containment of water be required.	Contractor	ECO / IECO / DWS	On-going	During construction phase
	4. All scour outlets (if any) will be provided with stone pitched or gabion mattress lined channels.	Contractor	ECO / IECO	On-going	During construction phase
	5. Visual inspections for the occurrence of erosion should be undertaken on a weekly basis.	Contractor / ECO	ECO / IECO	On-going	During construction phase
Handling of waste / Waste Management (Note that waste refers to all construction debris and domestic waste	• The contractor is responsible for the removal of construction waste. Please note that most of the dredged soil will be removed from the site, and used for levelling purposes by the applicant (also the landowner) on property belonging to the applicant.	Contractor	ECO / IECO	On-going	During construction phase
	1. Suitable containers (weather and vermin proof) will be placed on site to collect all solid waste. These will be emptied regularly.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
generated due to construction activities.)	2. No littering is permitted. During the construction and operational phase the site will be maintained in a neat and tidy condition.	Contractor	ECO / IECO	On-going	During construction phase
	3. All solid waste produced will be disposed of at an authorized landfill site. Recyclable waste may also be sold to recycling contractors.	Contractor	ECO / IECO	On-going	During construction phase
	4. No dumping, burning or burying of waste will be undertaken on site.	Contractor	ECO / IECO	On-going	During construction phase
	5. All hazardous waste will be disposed of at an authorized hazardous landfill site. Recyclable hazardous waste may be re-used or sold to recycling contractors, where possible.	Contractor	ECO / IECO	On-going	During construction phase
	6. A waste management plan will be compiled and designed to ensure that adequate waste management activities are undertaken.	Contractor	ECO / IECO	On-going	During construction phase
	7. Areas used for waste storage and loading of materials should be lined and bund walls have to be erected to contain any spills that might occur.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	8. Waybills providing evidence of correct disposal procedure must be provided for the ECO's inspection.	Contractor	ECO / IECO	On-going	During construction phase
	9. Waste classification should be undertaken.	Contractor	ECO / IECO	On-going	During construction phase
	10. Visual inspections for the occurrence of pollution should be undertaken daily.	Contractor	ECO / IECO	On-going	During construction phase
	11. Spills should be cleaned up immediately according to best practices	Contractor	ECO / IECO	On-going	During construction phase
	12. DWS should be notified of any spillage / pollution of water sources (groundwater and / or surface water) within 24 hours of occurrence	Contractor	ECO / IECO / DWS	On-going	During construction phase
	13. Record should be kept on site to indicate date of visual inspection, any spillages observed, and manner in which spill was treated.	Contractor / ECO	ECO / IECO / DWS	On-going	During construction phase
Health, safety and security	1. Site should be fenced / marked with danger tape, where possible.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	2. The contractors will comply with the Occupational Health and Safety Act, National Building Regulations and any other national, regional or local regulations with regard to safety on site.	Contractor	ECO / IECO	On-going	During construction phase
	3. Construction contracts will include safety and security measures for staff.	Contractor	ECO / IECO	On-going	During construction phase
	4. Precautions to ensure that construction staff and sites are visible and proper PPE will be provided to all employees.	Contractor	ECO / IECO	On-going	During construction phase
	5. Suitable warning and information signage should be available at the storage facilities. In addition, telephone numbers of emergency services (including local firefighting services) must be posted conspicuously on site.	Contractor	ECO / IECO	On-going	During construction phase
	6. Employees should be made aware of the health risks associated with any hazardous substances / dangerous goods used or stored on site. This includes soil that was contaminated with oil or diesel, etc.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	7. Employees should receive relevant safety training in handling of hazardous substances / dangerous goods associated with the proposed project.	Contractor	ECO / IECO	On-going	During construction phase
	8. Construction work within road reserves will accommodate road users as far as possible. This includes the following: - Roads will be crossed in half widths at a time to minimise the impact on vehicular traffic, where possible. - Construction along and across existing roads will be executed in such a manner that both pedestrian and vehicular traffic is accommodated at all times. - The contractor will be required to maintain adequate access to all public and private property at all times. - Contractor will supply, erect and maintain road signs for all work areas conforming to the prescribed layout and requirement of the South African Road Traffic Signs Manual and other relevant notices.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	9. Fire extinguishers will be available on site and in the construction camp (if any).	Contractor	ECO / IECO	On-going	During construction phase
	10. The contractor will be required to maintain adequate access to all public and private property at all times.	Contractor	ECO / IECO	On-going	During construction phase
	11. Speed limits of 20km/h will be enforced.	Contractor	ECO / IECO	On-going	During construction phase
	12. All relevant IAPs will be notified prior to any blasting activities	Contractor	ECO / IECO	On-going	During construction phase
	13. All relevant IAPs will be notified 24 hours prior to any known potential risks associated with the site and the activities to be undertaken on site (for example, possible downstream flooding as a result of removal of upstream diversion).	Contractor	ECO / IECO	On-going	During construction phase
	14. The necessary precautions with regard to road safety will be implemented for construction work within road crossings.	Contractor	ECO / IECO	On-going	During construction phase
	15. All injuries should be recorded.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
Heritage	1. In the case of the discovery of any heritage, archaeological or palaeontological significance, the work in the area will be stopped and reported to the archaeologist and SAHRA. Any construction activities in the nearby vicinity may only commence after approval is obtained from SAHRA as well as the ECO.	Contractor	ECO / IECO / SAHRA	On-going	During construction phase
	2. Known heritage resources (if any) must be avoided as far as possible.	Contractor	ECO / IECO / SAHRA	On-going	During construction phase
	3. Employees should be encouraged and informed of the need to be on the look-out for potential fossils / buried archaeological material.	Contractor	ECO / IECO / SAHRA	On-going	During construction phase
	4. In the case of the discovery of any stone tools or other archaeological or paleontological material, the work in the immediate vicinity should temporarily cease and reported to the archaeologist and SAHRA. Should any human remains be exposed, the archaeologist as well as the local SAPS should be notified.	Applicant / Contractor	ECO / IECO / SAHRA	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	5. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Tel: 021 462 5402) must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Tel: 012 320 8490), must be alerted immediately. A professional archaeologist or paleontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA.	Applicant / Contractor	ECO / IECO / SAHRA	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	6. Appropriate measures should be undertaken by the ECO until the archaeologist / SAPS visits the site. This should include the following: - Site should be fenced with 'danger tape' - Position of finding should be recorded - Depth of finding should be recorded - Digital image of the finding should be taken - No information on the findings may be made public without the consent of the archaeologist / SAPS.	Applicant / Contractor	ECO / IECO / SAHRA	On-going	During construction phase
	7. Construction activities in the area may only continue after approval from the archaeologist and SAHRA.	Applicant / Contractor / ECO	ECO / IECO / SAHRA	On-going	During construction phase
Noise and dust control	1. Construction activities will be limited to normal daytime hours, where possible	Contractor	ECO / IECO	On-going	During construction phase
	2. Noise levels will be kept as low as possible during the construction phase in order not to disturb adjacent landowners	Contractor	ECO / IECO	On-going	

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	3. Proper mitigation measures will be implemented to limit noise (e.g. the installation of silencers, where required).	Contractor	ECO / IECO	On-going	During construction phase
	4. Proper mitigation measures will be implemented to limit the formation of dust (e.g. wetting of construction area, when required).	Contractor	ECO / IECO	On-going	During construction phase
	5. The speed of the construction vehicles will be limited to avoid dangerous conditions, the formation of dust and the excessive deterioration of roads being used.	Contractor	ECO / IECO	On-going	During construction phase
Handling and Storage of materials	1. All chemicals used during the development, including fuel, will be stored in a proper storeroom or protected area to prevent pollution.	Contractor	ECO / IECO	On-going	During construction phase
	2. Vehicles will be serviced at designated areas. No oil, diesel or other chemicals may be spilled or discharged anywhere.	Contractor	ECO / IECO	On-going	During construction phase
	3. Where applicable, the contractors will ensure that all relevant national, regional and local legislation regarding storage, transport, use and disposal of petroleum,	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	chemical, harmful or hazardous substances and materials are adhered to, where necessary.				
	4. Cement and concrete mixing, if applicable, will only take place within the construction site. No concrete will be mixed directly on the ground.	Contractor	ECO / IECO	On-going	During construction phase
	5. All environmental problems occurring on the site such as chemical spillage, wasteful water disposal, etc. will be reported to the ECO. The ECO should implement best practices to rectify the impacts thereof on the environment.	Contractor	ECO / IECO	On-going	During construction phase
	6. Spill response equipment must be available during the handling and loading of hazardous waste (if any).	Contractor	ECO / IECO	On-going	During construction phase
	7. Hazardous substances are to be stored in bunded areas.	Contractor	ECO / IECO	On-going	During construction phase
	8. Bund walls will have a capacity of at least 110% of the total capacity of the stored volume.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	9. No oil, diesel or other chemicals may be spilled or discharged anywhere and contact with bare soil should be avoided at all cost.	Contractor	ECO / IECO	On-going	During construction phase
	10. Drip trays will be used during the servicing of vehicles as well as the transfer of chemicals / substances from transportation vehicles.	Contractor	ECO / IECO	On-going	During construction phase
	11. A monitoring system should be implemented to determine the occurrence (if any) of any fuel / oil spillages / untreated sewer.	Contractor	ECO / IECO	On-going	During construction phase
	12. The necessary mitigation measures should be implemented immediately, should any leakages / spills be detected.	Contractor	ECO / IECO	On-going	During construction phase
	13. Material stockpiles, such as bricks and pipes, must be stable and well secured to avoid collapse and possible injury	Contractor	ECO / IECO	On-going	During construction phase
	14. Material and Safety Data Sheets (MSDSs) should be readily available on site for all hazardous materials. MSDSs should additionally include information on ecological impacts and measures to	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	minimise negative environmental impacts during accidental releases or escapes.				
	15. Storage areas should be kept clean and free from any accumulation of combustible matter (such as paper) and any possible source of ignition should be removed.	Contractor	ECO / IECO	On-going	During construction phase
Hazardous waste management	1. Hazardous wastes must be separated from general wastes, stored within secondary containment in appropriate containers.	Contractor	ECO / IECO	On-going	During construction phase
	2. Proper storage facilities for the storage of hazardous / dangerous goods must be provided to prevent the migration of spillage into the soil and or groundwater.	Contractor	ECO / IECO	On-going	During construction phase
	3. Certificates / waybills of hazardous waste disposals are to be available on request as well as auditing purposes. This includes the removal of soil contaminated with hydrocarbons.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	4. Storage of hazardous substances and refuelling areas are to be bunded with an impermeable liner to protect groundwater quality and must comply with the relevant SANS codes.	Contractor	ECO / IECO	On-going	During construction phase
	5. Areas used for the storage of hazardous materials are to be clearly indicated as such.	Contractor	ECO / IECO	On-going	During construction phase
Hazardous and Flammable materials: Delivery	1. All deliveries (especially of hazardous nature) must be supervised.	Contractor	ECO / IECO	On-going	During construction phase
	2. Subcontractors and delivery companies should be informed of the delivery procedures and made aware of restrictions as to where materials may be stored.	Contractor	ECO / IECO	On-going	During construction phase
	3. Loads must be secured to prevent spillage during transportation thereof.	Contractor	ECO / IECO	On-going	During construction phase
	4. Hazardous substances are to be transported in sealed drums or bags	Contractor	ECO / IECO	On-going	During construction phase
Hazardous and Flammable	1. Limit cement and concrete mixing to single sites, where possible.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
materials: Cement and / or concrete mixing	2. No mixing allowed directly onto the ground.	Contractor	ECO / IECO	On-going	During construction phase
	3. All visible remains of excess material will be treated as hazardous waste.	Contractor	ECO / IECO	On-going	During construction phase
	4. Solid concrete waste may be treated as inert construction rubble. However, wet cement and liquid slurry and cement powder must be treated as hazardous waste	Contractor	ECO / IECO	On-going	During construction phase
Hazardous and Flammable materials: Gas Storage	1. All combustible materials are to be store at least 3 m from any gas storage areas. In case of any flammable or any other gas storage areas, open flames, welding and cutting operations, smoking, etc. shall be prohibited in or near the storage area.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	2. No gas will be delivered until the site is registered with local Fire Safety.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	3. Cylinders should always be stored in a well-ventilated area away from spark, flames or any source of heat or ignition.	Contractor / ECO	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	4. Cylinders should always be handled, stored, used and transported in an upright position. It should not be dropped, dragged or rolled on their sides or allowed to skid. Cylinders that are too large to be carried shall be tilted and rolled on the rims of their foot rings or bases.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	5. Valves should be kept properly closed.	Contractor / ECO	ECO / IECO	On-going	During construction phase
Hazardous and Flammable materials: Chemicals, Grease and Oil Storage	1. Storage areas must be bunded and hard surfaced in order to protect groundwater quality.	Contractor	ECO / IECO	On-going	During construction phase
	2. Compliance with SANS codes and hazardous substances bylaws should be adhered to.	Contractor	ECO / IECO	On-going	During construction phase
	3. All lids must be properly sealed / closed to prevent Volatile Organic Compounds (VOCs) and other potentially harmful gaseous compounds from escaping.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
Hazardous and Flammable materials: Hydrocarbon spillages	1. Spill kits are to be made permanently available at areas which have the potential to be subjected to spillage of hazardous substances and dangerous goods.	Contractor	ECO / IECO	On-going	During construction phase
	2. Remediation of spillages must be conducted immediately and closed out within 24 hours.	Contractor	ECO / IECO / DWS / DESTEA	On-going	During construction phase
	3. No waste water or waste will be disposed of into the surrounding environment at any time. Water collected in bunded areas must be collected in containers and disposed of as hazardous waste.	Contractor	ECO / IECO	On-going	During construction phase
	4. Machinery will be kept maintained in line with manufactures specifications to minimise the risk of hydrocarbon spillages.	Contractor	ECO / IECO	On-going	During construction phase
	5. An incident reporting system will be implemented in order to ensure incidents, where spillages has occurred, are closed out and appropriate measures are taken to prevent further incidents.	Contractor	ECO / IECO	On-going	During construction phase

Construction phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
	6. Incidents must be reported to DWS within 24 hours.	Contractor	ECO / IECO / DWS	On-going	During construction phase
	7. Contaminated soil must be disposed of in a hazardous materials skip and removed to a licensed hazardous landfill facility by a licensed contractor.	Contractor	ECO / IECO	On-going	During construction phase

Operational Phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
This phase consists of the operation of the weir. Maintenance and repair will be undertaken on the infrastructure when necessary.	1. Proper erosion mitigation measures should be implemented.	Applicant	DESTEA / DWS	On-going	During operational phase
	2. Visual inspections should be undertaken at least every 6 months to investigate the occurrence of sedimentation and erosion.	Applicant	DESTEA / DWS	On-going	During operational phase
	3. Soil erosion occurrences will be attended to immediately.	Applicant	DESTEA / DWS	On-going	During operational phase
	4. Establishment of alien vegetation will be monitored and alien species will be removed by hand or by an approved chemical before gestation thereof.	Applicant	DESTEA / DWS	On-going	During operational phase
	5. Stabilise the banks of the watercourses, where necessary.	Applicant	DESTEA / DWS	On-going	During operational phase

Decommissioning Phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
It is not anticipated that the proposed project will cease in the nearby future. However, if decommissioning is decided upon, a rehabilitation plan will be developed and submitted for approval. The end-use of the area will be kept in mind during the compilation of the rehabilitation plan. Activities	1. Temporary structures and office sites (if any) will be dismantled and removed after completion of the construction phase of the project.	Contractor	ECO / IECO	On-going	During construction phase
	2. All waste, equipment, materials, etc. used during construction will be cleared from the site. The contractors will ensure that the site is cleared and rehabilitated to the satisfaction of the ECO.	Contractor / ECO	ECO / IECO	On-going	During construction phase
	3. An alien plant control and monitoring programme will be implemented.	Contractor	ECO / IECO	On-going	During construction phase
	4. Sedimentation and Erosion Control Measures will be implemented.	Contractor	ECO / IECO	On-going	During construction phase
	5. The establishment of natural occurring vegetation will be encouraged at disturbed areas. Re-vegetation of disturbed areas will be undertaken with site indigenous species.	Contractor	ECO / IECO	On-going	During construction phase
	6. Hydro-seeding will be implemented if the establishment of natural occurring vegetation does not occur within	Contractor / ECO	ECO / IECO	On-going	During construction phase

Decommissioning Phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
associated with the decommissioning phase will be limited to the rehabilitation of areas disturbed during the construction phase. All disturbed areas will be rehabilitated according to best practices. A rehabilitation plan will be developed, if it is decided to remove the weir associated infrastructure	reasonable time.				
	7. After completion of the construction phase, a waterway monitoring program will be initiated that ensure that all are adequately rehabilitated.	Contractor	ECO / IECO	On-going	During construction phase
	8. Temporary concrete surfaces (if any) will be removed and compacted areas ripped.	Contractor	ECO / IECO	On-going	During construction phase
	9. Establishment of extensive alien species will be monitored.	Contractor	ECO / IECO	On-going	During construction phase

Decommissioning Phase					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
before the cessation of the operation aspects of the proposed project. The rehabilitation plan will include management and mitigation measures to be implemented during the decommissioning of the project					

No-Go Option					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
Keeping the status quo - No dredging at the weir. Thus, no sludge material will be removed from the weir-area. This will reduce the functionality of the weir and will lead to malfunctioning of the Senekal Bulk Water Supply System. Therefore, the no-go option is not seen as a feasible and / or reasonable	1. Erosion control measures are to be implemented	Applicant	DESTEA / DWS	On-going	N/A

No-Go Option					
Objective	**Mitigation Measure**	**Executing Party**	**Monitoring Party**	**Timeframe**	**Project Stage**
alternative					

APPENDIX H

Details of EAP and
EAP Declaration

To be attached to fBAR

APPENDIX I

Specialist Declaration

To be attached to fBAR

- Archaeologist
- Ecologist

APPENDIX J

Additional information

APPENDIX J_1

Copy of existing DWS Authorisation

To be attached to fBAR, if available

APPENDIX J_2

Confirmation from the Local Municipality

N/A, as the Setsoto Local Municipality is the Applicant

APPENDIX J_3

Title Deed Document

To be attached to fBAR