

DRAFT Basic Assessment for the proposed Nile Tilapia
Aquaculture farm project, Plot 19 Klipview, Midvaal Local
Municipality, Meyerton - Gauteng Province.

DRAFT BASIC ASSESSMENT REPORT



March 2018

Prepared for: Kedake Resources (Pty) Ltd

CSIR Report Number: CSIR/CAS/EMS/IR/2017/15768/A

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BASIC ASSESSMENT PROCESS

DRAFT Basic Assessment for the proposed Nile Tilapia Aquaculture farm project, Plot 19 Klipview, Midvaal Local Municipality, Meyerton - Gauteng Province.

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Prepared for:

Kedake Resources (Pty) Ltd

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REPORT DETAILS

Title:	Basic Assessment for the proposed Nile Tilapia Aquaculture farm project, Plot 19 Klipview, Midvaal Local Municipality Meyerton-Gauteng Province.
Purpose of this report:	<p>T The purpose of this BA Report is to:</p> <ul style="list-style-type: none">• Present the proposed project and the need for the project;• Describe the affected environment at a sufficient level of detail to facilitate informed decision-making;• Provide an overview of the BA Process being followed, including public consultation;• Assess the predicted positive and negative impacts of the project on the environment;• Provide recommendations to avoid or mitigate negative impacts and to enhance the positive benefits of the project;• Provide an Environmental Management Programme (EMPr) for the proposed project. <p>This BA Report is the Draft Version submitted to the Gauteng Department of Agriculture and Rural Development (GDARD) for decision-making.</p>
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Basic Assessment for the Kedake Resources (Pty) Ltd Fish Farming project,
Plot 19 Klipview Midvaal Local Municipality, Meyerton - Gauteng Province.

ENVIRONMENTAL ASSESSMENT PRACTITIONER

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Project Team:

NAME	QUALIFICATION & EXPERTISE
Minnelise Levendal (Project Leader and Internal Reviewer)	<ul style="list-style-type: none">• MSc Biological Science (Botany) (Stellenbosch University)• Pr.Sci.Nat.• 16 years of experience in Environmental Management• Inclusive of 10 years' experience in conducting Environmental Assessments
Karabo Mashabela (Lead author & Project Manager)	<ul style="list-style-type: none">• MSc Geography and Environmental Science (University of Limpopo)• Over 3 years of experience conducting Basic Assessments and being a project officer on the national Strategic Environmental Assessment for aquaculture.
Paul Lochner (Group Manager and Internal Reviewer)	<ul style="list-style-type: none">• M.Phil (Env Science) (UCT)• 26 years experience in environmental assessment and management• Registered EAPSA since 2003.

EXECUTIVE SUMMARY

BACKGROUND DESCRIPTION

Kedake Resources (Pty) Ltd is a small-scale start up fish farming enterprise located on a 10 hectare farm on Plot 19 Klipview Midvaal Local Municipality, near Meyerton in Gauteng Province. The applicant is proposing the development of a 60 tons per annum Nile Tilapia fish production facility on the farm. The proposed facility will supply fish (Nile Tilapia) to major supermarkets and butcheries within the Emfuleni, Vereeniging, Sebokeng, Soshanguve, Ga-Rankuwa and Tshwane markets. The proposed development will be of socio-economic value to local area as it will provide local employment opportunities, as well as contributing significantly to the fish farming industry of the area and of the broader South Africa.

LEGAL REQUIREMENTS AND LEGISLATIVE PROCESS

The proposed project triggers certain listed activities in terms of the Environmental Impact Assessment (EIA) Regulations, Government Notice (GNR) 327 of 7 April 2017 under the National Environmental Management Act, Act No. 107 of 1998 (NEMA) as amended. Relevant listed activities triggered by the proposed activities are indicated below:

GN. R 327, 7 April 2017 Activity 6: The development and related operation of facilities, infrastructure or structures for aquaculture of-

- (i) finfish, crustaceans, reptiles or amphibians, where such facility, infrastructure or structure will have a production output exceeding 20 000 kg per annum (wet weight)

GN. R 327, 7 April 2017 Activity 8: The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.

GNR.327, 7 April 2017 Activity 27: The clearance of an area of 1 hectare 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 activity; or
- (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Activities are also triggered under the National Water Act (Act 10 of 1988)

Section 21 (a): taking water from a water resource i.e. borehole for farming purposes.

Under the National Environmental Management Waste Act (NEM:WA), the Regulations GNR 921 of 29 November 2013 on waste management activities in respect of which a waste management licence is

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required also applies. This Basic Assessment Report (BAR) will identify potential impacts associated with the proposed project and recommend mitigation measures to avoid or reduce these potential impacts.

PREDICTED IMPACTS

The aim of the environmental assessment is to identify potential impacts associated with the development and to recommend mitigation measures to avoid or reduce adverse impacts and promote positive impacts. A summary of potential impacts that have been identified during the Basic Assessment process is provided below:

Summary of potential impacts	Impact status	Significance rating of impacts before mitigation	Significance rating of impacts after mitigation
Impact on soil (erosion and dust)	Negative	Moderate	Low
Loss of vegetation and faunal habitat	Negative	Low	Low
Impact on Conservation Important species	Negative	Low	Low
Introduction and increase in alien vegetation	Negative	High	Low
Impact on wetland habitat	Negative	Low	Very Low
Potential for pollution of water sources	Negative	Low	Very low
Waste generation	Negative	Moderate	Low
Impact of pests and disease transmission	Negative	High	Low
Increased traffic generation during construction and operational phases	Negative	Low	Low
Employment opportunities created	Positive	Moderate	High

An Environmental Management Programme (EMPr) has been compiled for the proposed aquaculture production facility (included in Appendix H), to manage and mitigate identified potential negative impacts associated with the project, and enhance the benefits. Implementing effective mitigation measures will assist in reducing the potential impacts on the surrounding environment during both the construction and operational phases of the proposed development. With the implementation of the mitigation measures as suggested in the EMPr, the significance of most of the potential negative impacts associated with the proposed development is Low.

IMPACT ASSESSMENT AND MITIGATION

The BA Report is informed by two specialist studies: a Geohydrology Impact Assessment and a Heritage Impact Assessment, together with inputs sourced by the environmental scientists in the CSIR team. No negative impacts have been identified within this BAR that, in the opinion of the EAP, should be considered as “fatal flaws”.

The main negative impacts of the Kedake Resources Aquaculture project are predicted to be:

- Waste water management during the production phase and the harvesting phase
- Waste generated from the processing fish house

The main positive benefits of the project are predicted to be:

- Employment of up to 30 persons during the construction phase and 60 people during the operation phases (harvest phase) of the project
- Food security from the production of 60 000 kg per annum of tilapia as well as vegetables.

All relevant mitigation measures required to ensure that the project is planned and conducted in an environmentally responsible manner are listed in the EMPr. The EMPr is a dynamic document that should be updated as required and provides clear and implementable measures for the proposed project.

Mitigation actions have been included in the EMPr and include the following:

- Development should be contained within the proposed footprint of the project and unnecessary disturbance adjacent to the site should be avoided
- Minimise clearance of natural vegetation and disturbance at the site.
- Use existing and dedicated access roads to limit disturbance of the natural vegetation.
- Management of waste water to avoid contamination of water courses.

EAPS RECOMMENDATION

Based on the findings of the Basic Assessment process for Kedake Resources (Pty) Ltd, it is recommended that this project be authorised, subject to the following conditions:

- 1) The EMPr of this proposed development must form part of the contractual agreement and be adhered to by both the contractors and the applicant.
- 2) The applicant must ensure compliance with the conditions of the Environmental Authorisation and mitigation measures within the EMPr during all the phases of the project.
- 3) A Water Use Licence must be obtained from the Department of Water and Sanitation (DWS) for the water usage associated with the fish operations as well as the re-use of waste water for irrigation.

Kedake Resources (Pty) Ltd is being assisted *pro-bono* under the DEA Special Needs and Skills Development Programme, which is a programme aimed to assist small-Moderate scale emerging farmers/businesses who do not have the financial means to pay for environmental services, as such do not have the financial opportunity to have more than one alternative site available, it is therefore recommended by the EAPs that the proposed site and layout be included in the Environmental Authorisation.

It is the opinion of the EAP that the proposed development will comply with current relevant environmental legislation, and that with the implementation of the mitigation measures suggested in this BAR, there are no environmental impacts of high significance identified after mitigation. A Geological, Agricultural, Heritage specialist and Botanical survey (CSIR exemption granted) studies was conducted to inform the BA to ensure that the proposed layout avoids areas of high sensitivity. Based on the above, it is therefore recommended that the proposed development be granted Environmental Authorisation.

CONCLUDING STATEMENT FROM EAP

Provided that the specified mitigation measures outlined in the EMPr are applied effectively, it is the opinion of the EAPs in the CSIR team that the benefits of the project outweigh the negative impacts and the project should receive Environmental Authorisation in terms of the EIA Regulations promulgated under the NEMA.

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APPENDICES

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Appendix B	Photographs
Appendix C	Facility illustration(s)
Appendix D	Route position information - N/A
Appendix E	Public participation information
Appendix F	Water use license(s) authorisation - Appendix F SAHRA information - Appendix F Service letters from municipalities - Appendix F Water supply information - Not applicable at this stage
Appendix G	Specialist Reports
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GLOSSARY

BA	Basic Assessment
BAR	Basic Assessment Report
CI	Conservation Important
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GDARD	Gauteng Department of Agriculture and Rural Development
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
NEMA	National Environmental Management Act, Act No. 107 of 1998
NEM:WA	National Environmental Management: Waste Act, Act No. 59 of 2008
NHRA	National Heritage Resources Act, Act No. 25 of 1999
NSS	Natural Scientific Services
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
AASA	Aquaculture Association of South Africa
SDF	Spatial Development Framework
WUL	Water Use Licence
NWA	National Water Act, Act No. 36 of 1998
WULA	Water Use Licence Application

Requirements according to Appendix 1 of GNR 982 of 4 December 2014 – Scope of Assessment and Content of BAR

<u>SCOPE OF ASSESSMENT AND CONTENT OF BAR</u>	<u>SECTION IN BAR</u>
1) A basic assessment report must contain all the information that is necessary for the competent authority to consider and come to a decision on the application, and must include -	
(a) details of –	Page 2
i. the EAP who prepared the report; and	
ii. the expertise of the EAP, including a curriculum vitae;	Page 2 Appendix I
(b) the location of the activity, including:	
(i) the 21 digit Surveyor General code of each cadastral land parcel;	Section A
(ii) where available, the physical address and farm name;	
(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Appendix A
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	
or, if it is-	
(i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken;	Appendix A
or	
(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	
(d) a description of the scope of the proposed activity, including-	
(i) all listed and specified activities triggered and being applied for; and	Section A
(ii) a description of the activities to be undertaken including associated structures and infrastructure ;	
(e) a description of the policy and legislative context within which the development is proposed including-	Section A2

<u>SCOPE OF ASSESSMENT AND CONTENT OF BAR</u>	<u>SECTION IN BAR</u>
(i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	Section E7
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section B9 Section E9
(g) a motivation for the preferred site, activity and technology alternative;	Section A3
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: <ul style="list-style-type: none"> (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- <ul style="list-style-type: none"> (aa) can be reversed (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) the possible mitigation measures that could be applied and level of residual risk; (ix) the outcome of the site selection matrix; (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity; 	Section A3 Appendix E Section B Appendix G Section E Appendix F
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including-	Section E,

<u>SCOPE OF ASSESSMENT AND CONTENT OF BAR</u>	<u>SECTION IN BAR</u>
(i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and	Appendix G
(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Appendix H
(j) an assessment of each identified potentially significant impact and risk, including- (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Section E Appendix G
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Appendix H
(l) an environmental impact statement which contains- (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	Section E Appendix A Appendix G
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Section E Appendix G Appendix H
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Appendix G
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Appendix G Section E
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Appendix G Section E8

<u>SCOPE OF ASSESSMENT AND CONTENT OF BAR</u>	<u>SECTION IN BAR</u>
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A
(r) an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Appendix I Section C Appendix E
(s) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
(t) any specific information that may be required by the competent authority; and	N/A
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

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**Basic Assessment Report in terms of the National Environmental Management Act, 1998
(Act No. 107 of 1998), as amended, and the Environmental Impact Assessment
Regulations, 2014 (Version 1)**

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. 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.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. 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 application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.

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13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the of the Environmental Affairs Branch
P.O. Box 8769
Johannesburg
2000

Administrative Unit of the of the Environmental Affairs Branch
Ground floor Diamond Building
11 Diagonal Street, Johannesburg

Administrative Unit telephone number: (011) 240 3377
Department central telephone number: (011) 240 2500

(For official use only)

NEAS Reference Number:						
File Reference Number:						
Application Number:						
Date Received:						

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

N/A

Is a closure plan applicable for this application and has it been included in this report? NO

if not, state reasons for not including the closure plan.

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity? Yes

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person? Yes

If no, state reasons for not attaching the list.

Have State Departments including the competent authority commented? Yes

If no, why?

Introduction to the Proposed Project

Aquaculture is the farming of fish, crustaceans, molluscs, aquatic plants, algae, and other aquatic organisms (DAFF, 2016). In South Africa, the aquaculture industry is still in its developmental stage in comparison to the global aquaculture community, however, it has the potential to grow and contribute towards job creation, food security, economic development and export opportunities. The local aquaculture sector, involving both marine and freshwater species has generally performed below its potential and remains a minor contributor to national fishery products and the country's Gross Domestic Product (GDP) (DAFF, 2015a; FAO, 2016). Growing public demand for a healthy tasty and affordable food is stimulating the industry. The decline in wild fish populations as a result of over-harvesting and water pollution has promoted the culture of farmed fresh that are grown in contaminant-free waters in indoor tank systems.

The Kedake Resources Ltd (Pty) is a start-up company proposing to establish a Moderate-sized aquaculture facility that will produce 60 tons of Nile Tilapia, *Oreochromis niloticus*, per annum (30 tons per six-month growth cycle). The applicant is leasing 10 ha of land from Mr Imraan Nana on Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province (Figure 1). The lease agreement includes the utilisation of two boreholes on site. The fish will be stocked in 45 fish rearing tanks (250 litres each). The fish waste (faeces and uneaten food) will flow into the settling tank. Biofiltration will convert toxic ammonia into plant friendly nitrates before the nitrate rich water is used for irrigation. The remaining wastewater will be sold to Non-Profit Organisations to irrigate their plants.

The Kedake Resources Ltd (Pty) is proposing a land-based aquaculture facility, which involves producing fish in large land-based tank systems. These recirculating aquaculture systems (or RAS) are a well-defined technology and used in many countries (Funge-Smith & Phillips, 2001; Newman, 2012). Tilapia grow well on feed with lower protein levels and higher carbohydrate levels than the other analysed species (FAO Fisheries and Aquaculture Department 2014d).

The proposed facility requires a Water use licence in terms of section 40 of the National Water Act, 1998 (Act 36 of 1998) as the facility will use approximately 432 m³ of water per annum and an application has been lodged with the Department of Water and Sanitation (DWS) by CSIR on behalf of the applicant. A Geohydrology study was conducted by Environmental Assurance as part of the WULA application and was submitted to DWS. A decision from DWS is currently pending.

The water required for the 45 fish tanks (250 litres each) will be sourced from the existing two boreholes on site. Each Fish tank will be pumped with 200 litres of water per week. Six waste water tanks, with a volume of 5 000 l and a height of 1,2 m each, will be installed on site. The effluent produced will be used to irrigate lettuce vegetable garden which will be established on site. The remaining waste water will be sold to Non-Profit Organisations to irrigate their own vegetable gardens.

An Invasive Alien permit application was lodged with the Provincial Department of Environmental Affairs for permission to farm with *Oreochromis niloticus* (Nile tilapia). The permit application was approved and a permit has been issued for Possession/Grow/Sell Permit number: 5092282104 and for Convey Permit number: 5092282108 (included in Appendix G).

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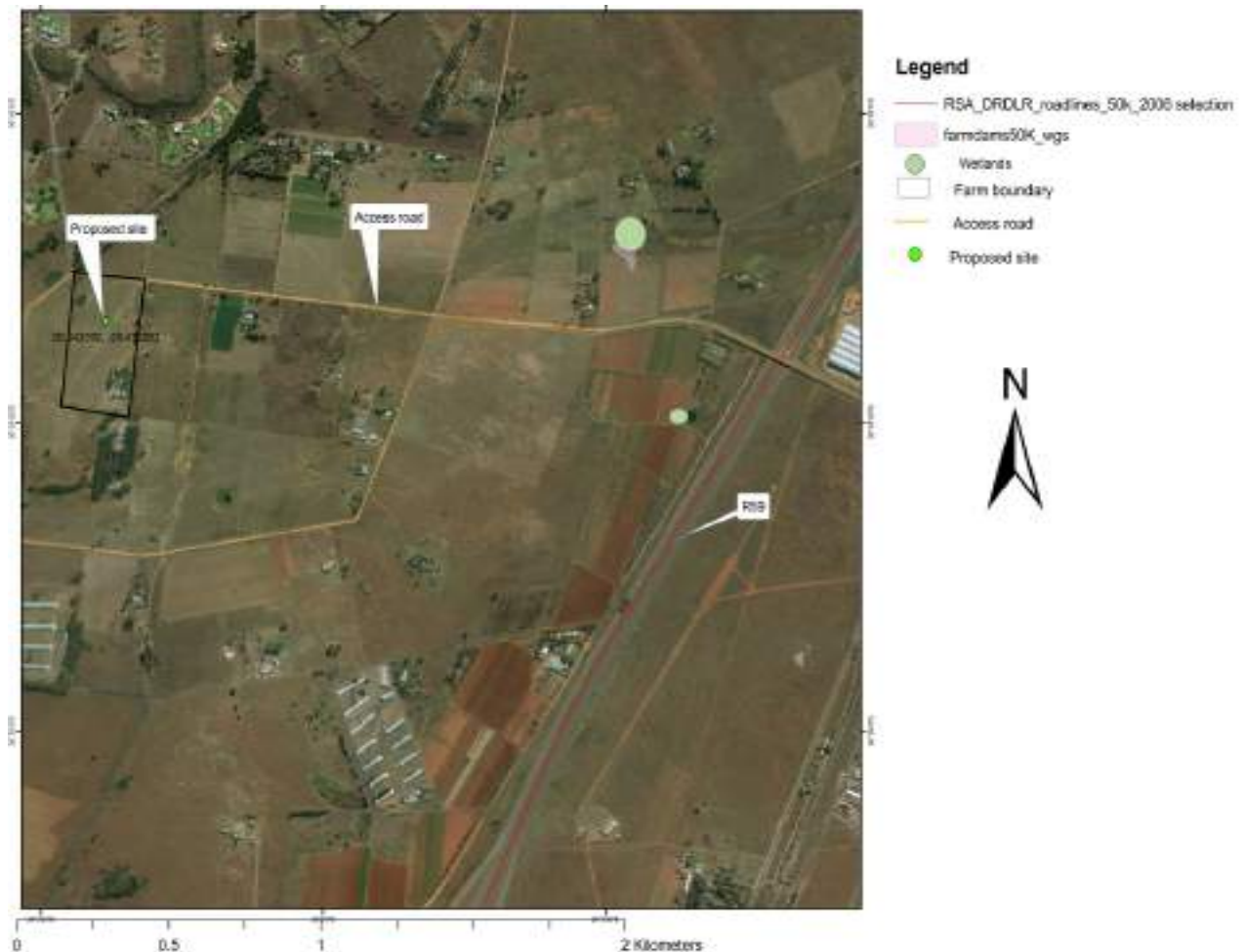


Figure 1: Location of the proposed extension of a Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province.

Water Source and Aquifer Testing Results

As input to the BA process, a technical study on groundwater suitability and yield was conducted by ENVASS (2018). A compressive aquifer test was conducted on the projects site's existing abstraction borehole (KFFBH1). Before the start of the constant discharge test (CDT) the static groundwater level (SWL) was at 13,70 m.bgl and the pump intake elevation was at ~50 m.bgl, making the available drawdown 36.3 m. The borehole was tested at an average rate of 0.16 l/sec during the constant discharge test, for duration of 230min (3 5/8 hours) before the pump's intake level was reached. Directly after the CDT was stopped the recovering water levels (RT) was recorded, and it took 500 min (8 1/3 hours) for the water levels to recover back to 100 % of its original water level (see the attached Geo-Hydrology report).

Electrical conductivity was conducted using a Solinst TLC meter on the 24th January 2018. A sudden change in the EC - concentrations could indicate zones of inflow (i.e. water strikes) within the borehole column. Based on this data, two (2) potential zones of inflow could be identified; first at ~25 m.bgl and second at ~39m.bgl figure below.

The aquifer testing was performed on the 24th January 2018 on borehole KFFBH1. The aquifer test data was analysed using AQTESOLV Pro 4.0 software. The Birsoy and Summers (1980) and Their Recovery Method (REF) equations were used to determine the aquifer Transmissivity (T) values

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based on the drawdown data. The Birsoy and Summers (1980) equation was used to analyse the drawdown data, while the Theis Recovery (ref) equation was used to calculate the Transmissivity values for the water level recovery data. Based on the borehole's calibration test response, an abstraction rate of 0.16 l/sec was selected for the constant discharge test (CDT). Before the start of the constant discharge test (CDT) the static groundwater level (SWL) was at 13,70 m.bgl and the pump intake elevation was at -50 m.bgl, making the available drawdown 36.3 m. The CDT lasted just under 230min (~3 hours) duration, where a drawdown of 100% was achieved. Directly after the CDT was stopped the recovering water levels (RT) was recorded, and it took 500 min (8½ hours) for the water levels to recover back to 100 % of its original water level. The drawdown graphs for the aquifer tests are presented in Figure below, while the comprehensive aquifer test field data are attached in Appendix B of the Geo-hydrology report (ENVASS, 2018).

Type of Test	Water Strike Depth	SWL	Pump Intake Depth	(D) Available Drawdown	Abstraction Rate	Duration of Test	Maximum Drawdown		Recovery Time		(T) Transmissivity (m ² /d)	
	(m.bgl)	(m.bgl)	(m.bgl)	(m)	(l/s)	(min)	(m)	%	(m)	%	Birsoy and Summers (1980)	Theis Recovery Method
CDT	~25 & ~39	13.70	~50	36.3	0.16	230 (3½ hr)	36.4	88.14	-	-	0.12	-
RT					0	500 (8½ hr)	-	-	0	100	-	0.11

Figure 2: Borehole KFFBH1 Aquifer Test Results Table (ENVASS, 2018)

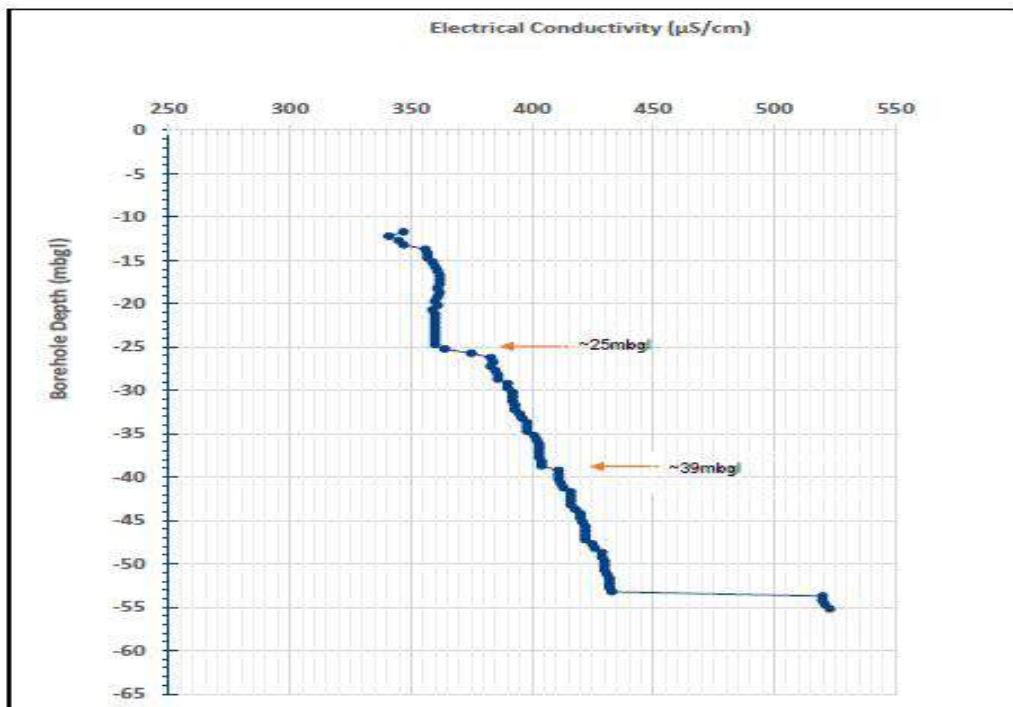


Figure 3: Electrical conductivity profiling results (ENVASS, 2018)

Groundwater Levels and Flow Directions

Out of the twelve (12) hydrocensus boreholes, groundwater levels could only be measured at five (5) of these boreholes. Groundwater levels varied between 7.23 metres below ground level (m.bgl) and 17.31 m.bgl. The groundwater flow direction of the site is towards the Kliprivier, which is approximately 3 km east of the site. Based on the National Groundwater Archive Dataset (NGA, 2018), a total of 327 groundwater level data points were available within a 10-km radius around the project site. These groundwater elevations were plotted against borehole surface collar elevation (Figure 3), and two (2) type of aquifer unit/systems could be identified:

- Unconfined Aquifer Unit: with a 95% correlation between groundwater and surface topography elevations; and
- Confined Aquifer Unit: with 37% correlation between groundwater and surface topography elevations.

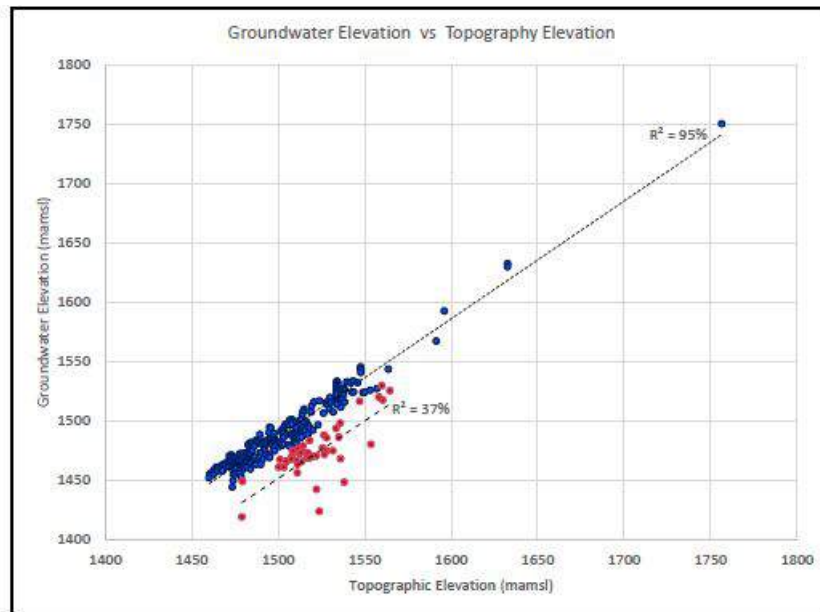


Figure 4: Correlation between Groundwater Elevation - Surface Topography Elevation (ENVAAS, 2018)

Proposed Project Components and Layout

The main project components and the proposed layout plan for the full three phases of the project up to 60 000 kg per annum fish production is shown in Figure 4. The technology that will be employed on the farm is a Recirculating Aquaculture System (RAS).

The total area of the property is approximately 10 hectares. The total footprint of the new facilities proposed as part of the project is approximately 8.5 hectares, which includes the fish tanks and waste water tanks.



Figure 5: Layout plan for the proposed aquaculture facility

Proposed Operations:

- Installation of 45 Fish Tanks (250 litres each)
- Installation of four waste water tanks (5 000 litres each)
- Pump Room
- Solar Panels to provide electricity to pump water
- Water requirements: 432m³ Litres annually
- Two hectares vegetable farming (Lettuce)
- 45 fish tanks and five waste tanks, consisting of:
 - Waste tanks : Five 5000 litre fish rearing tanks of 2700 mm diameter
 - Forty five 250 litre fish rearing tanks of 2200 mm diameter
- The existing structures (30m length x 10m breadth) consists of:
 - Post-harvesting /Packing of fish
 - Processing fish house
 - Workers facilities (kitchen, toilet etc. (30m length x 10m breadth)
 - Office Space

Construction phase activities

The impacts on groundwater during construction would be limited due to the scale of the site operations. Should groundwater be used to supply the construction activities (e.g. drinking water, dust suppression and concrete mixing), localized dewatering could occur at the borehole. This would be a low impact both before and after management measures are put in place due to the localized extent of dewatering and the short duration of the impact. During construction, it is likely that domestic waste would be generated by contractors and the site staff, which may result in groundwater contamination if not disposed of correctly. The domestic waste would have a low impact on the receiving environment, however it should be disposed of at a suitable landfill site only and good housekeeping practices should be implemented and maintained at the site. The electricity demand will be minimal during construction phase, with a budget of approximately 450 kl per month for electricity. The proposed facility during construction phase will create employment for 30 people and different construction companies will be hired from the Midvaal Local Municipality Meyerton.

Operations phase activities

During the Operational Phase of the site, groundwater would be abstracted from the on-site borehole (KFFBH1) and used in the aquaculture tanks for fish production. The production of fish at the site would result in product wastewater from the aquaculture tanks, as well as runoff water from the cleaning and processing activities. The impacts on the receiving groundwater environment due to borehole abstraction (if managed correctly) are low, with the drawdown cone of the borehole expected to be limited (i.e. remaining within the site boundaries). Due to the limited extent of the drawdown cone at the site it is unlikely that any groundwater users would be significantly impacted on during operations. The proposed facility will transport live fish to a nearby processing facility and Pretoria markets up until income is generated to run the processing facility in house. Fish production will include the operational process where young fish or eggs will be purchased quarterly from a farm in Gauteng for the first year for breeding. Thereafter the breeding will be one at the fish farm.

Storage of Water

Following abstraction, the water will be stored in a tank on site. This tank will be connected with distributor pipes that will connect to the other 45 fish tanks and will also be used for operations on site.

Environmental Assessment Process

The Council for Scientific and Industrial Research (CSIR) was appointed by the national Department of Environmental Affairs (DEA) to manage the Special Needs and Skills Development Programme which is aimed at providing *pro-bono* environmental services to small-scale businesses. Under this programme, CSIR undertakes Basic Assessments (BAs) for applicants who can demonstrate that they have “special needs”, in particular, where applicants cannot afford to undertake the necessary BA process. This led to the CSIR undertaking this BA for the proposed tilapia aquaponics farm project on Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province.

The proposed development triggers listed activities in terms of the Environmental Impact Assessment (EIA) Regulations, Government Regulations (GNR) 327 and 324 of April 2017 promulgated under the National Environmental Management Act (NEMA) (Act no 107 of 1998). In terms of these Regulations, a Basic Assessment should be undertaken for the proposed project. The CSIR is managing the BA process on behalf of the project applicant.

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In terms of the amended NEMA EIA Regulations published in GNR 324, 325, 326 and 327 on the 7 April 2017 Government Gazette Number 40772, a BA process is required as the project triggers the following listed activities (detailed in Table 1 below).

Table 1: Listed activities relating to this proposed tilapia aquaponics project

Relevant notice	Activity No. (in terms of the relevant notice):	Description of each listed activity as per the Government Notice
GN.327,7 April 2017	3.(iii)	The development and related operation of facilities or infrastructure for the slaughter of animals with a — (iii) wet weight product throughput of fish, crustaceans or amphibians exceeding 20 000 kg per annum.
GN. R 327, 7 April 2017	6. (i)	The development and related operation of facilities, infrastructure or structures for aquaculture of: (i) finfish, crustaceans, reptiles or amphibians, where such facility, infrastructure or structures will have a production output exceeding 20 000 kg per annum (wet weight);
GN. R 327, 7 April 2017	8	The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.
GN. R 327, 7 April 2017	27	The clearance of an area of 1 hectare 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 activity; or ii) maintenance purposes undertaken in accordance with a maintenance management plan.

These listed activities require Environmental Authorisation from GDARD.

SECTION A: ACTIVITY INFORMATION

A.1 Proposal or Development Description

Project title (must be the same name as per application form):

Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province

Select the appropriate box

The application is for an upgrade of an existing development The application is for a new development Other, specify

Does the activity also require any authorisation other than NEMA EIA authorisation?

NO

If yes, describe the legislation and the Competent Authority administering such legislation

National Water Act, 1998 (Act 36 of 1998), and the Competent Authority is the Department of Water and Sanitation.

National Heritage Resources Act (Act 25 of 1999), and the Competent Authority is the South African Heritage Resources Agency (SAHRA).

Application for the permit/s in terms of Chapter 7 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), as amended: Alien and invasive species regulations

Act No. 59, 2008. Government Gazette, 10 March 2009. National Environmental Management: Waste ACT. 2008.

If yes, have you applied for the authorisation(s)?

YES NO

If yes, have you received approval(s)? (attach in appropriate appendix)

A.2 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:

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
NEMA Environmental Impact Assessment Regulations GNR 982 of 4 December 2014	National & Provincial	4 December 2014
National Water Act 36 of 1998	National & Provincial	26 August 1998
National Environmental Management Biodiversity Act 10 of 2004	National & Provincial	2004

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National Heritage Resources Act 25 of 1999	National & Provincial	1999
National Development Plan	National	2012
Midvaal Municipality IDP and SDF	Local and Provincial	2014/2015 & 2016-2017 2017-2022
<i>Description of compliance with the relevant legislation, policy or guideline:</i>		

Legislation, policy of guideline	Description of compliance
National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998 as amended).	An application for Environmental Authorisation for the proposed development is submitted in terms of GNR 982 of NEMA EIA Regulations, 4 December 2014, promulgated under NEMA.
GNR 327 of NEMA EIA Regulations, 7 April 2017	To promote integrated environmental management, contents of this BAR adhere to the requirements of the EIA Regulations. Appendix H includes the Environmental Management Programme that the project will adhere to if authorisation is received. Appendix E refers to the Public participation followed thus far in undertaking this assessment.
National Water Act, 1998 (Act 36 of 1998)	Water Use Licence Application (WULA)
National Development Plan	The South African Government through the Presidency has published a National Development Plan. The Plan aims to eliminate poverty and reduce inequality by 2030. The Plan has the target of developing people's capabilities to improve their lives through education and skills development, health care, better access to public transport, jobs, social protection, rising income, housing and basic services, and safety. It proposes to implement the following strategies to address the above goals: 1. Creating jobs and improving livelihoods; 2. Transition to a low-carbon economy; 3. Transforming urban and rural spaces; 4. Improving education and training; 5. Providing quality health care; 6. Fighting corruption and enhancing accountability; 7. Transforming society and uniting the nation.
National Heritage Resources Act, 1999 (Act 25 of 1999)	An application for Heritage Resources review was submitted to SAHRA in terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) as amended.
National Environmental Management: Biodiversity Act 10 of 2004	The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) as amended (NEMBA) including all the pertinent legislation published in terms of this act was considered in undertaking this Basic Assessment process. This included the determination and assessment of the fauna and flora prevailing in the proposed project and the handling thereof in terms of NEMBA.

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A.3 Alternatives

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the 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.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not** include the no go option into the alternative table below.

Note: 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.

Please describe the process followed to reach (decide on) the list of alternatives below

The proposed alternative was considered based on the location of the fishery and re-aligned accordingly to avoid the sensitivities on site as determined by the Geo-hydrology study, Heritage and Agricultural Studies undertaken as part of the Basic Assessment process. No other additional location alternatives have been proposed for the project as this is the only site available for the applicant.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide details of "other")	Description
1	Property Alternative	Alternative properties or locations for the proposed activity have not been identified, due to the fact that the proposed property is the only property available to the applicant. The owner was able to acquire this land parcel, and it would not be economically feasible for the business to purchase a new or alternative property. The applicant has been selected as a "special needs" candidate and is eligible for support under this DEA Special needs program, primarily because the applicant has very limited financial resources. This is discussed further below in the "Motivation".
2	Activity Alternative	No feasible alternative has been identified to the proposed activity of fish farming with associated vegetable farming. This is discussed further below in the "Motivation".
3	Design or Layout Alternative	The proposed design and layout of the activity is more of a biosecurity measure, and allows for more effective management of fish production as it lessens the risk of the fish catching diseases if the activity is in a more disease prone or exposed location. This is discussed further below in the "Motivation".
4	Technology to be used	The technology that will be employed on the farm is a recirculating aquaculture system (RAS).

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

MOTIVATION:

Site location and layout alternatives

Kedake Resources (Pty) Ltd has been identified as a client under the “Special Needs and Skills Development Programme”, which is a *pro bono* programme aimed at providing environmental services to small-Moderate scale businesses who do not have the financial means to comply with the EIA Regulations. The Department of Environmental Affairs (DEA) commissioned the Council for Scientific and Industrial Research (CSIR) to manage the Programme to assist these clients with undertaking Basic Assessments to obtain Environmental Authorisation for their proposed developments.

The proposed development is a start-up company envisioned to establish a Moderate size aquaculture facility that will produce 60 tons of Nile Tilapia at a commercial scale per annum. Nile Tilapia will be grown over a six month cycle and as such Kedake Resources (Pty) Ltd has not identified an alternative location or property due to the fact that this is the only land parcel they could acquire. The layout of the proposed project is a biosecurity measure aimed to minimise and/or control entry to the fish facility thus minimising the spread of diseases, and has also been guided by the findings of the specialist studies (Appendix G) in order to avoid impacts on areas of high conservation.

Activity Alternative

When conducting due diligence for a suitable enterprise, considered an enterprise that would be suitable for the relatively small size of the farm as well as one that would maximize on quality of the product and display good potential for growth along the value chain. Fish production was considered as the industry is growing, with the potential for opportunities in this industry such as Fish production increasing by an annual average of 4.5%, second to broiler production which grew by 6%, production turnaround for fish is quicker and demand fundamentals for this product are unlikely to change. This industry also presents opportunities as there is a huge potential in the rural markets and exports to the SADC region.

Design & Technology Alternatives

The design and operating plan for the proposed development is guided by extensive market research and an assessment of the need of the products that will be produced added economic value to the area.

The water required for the thirty fish tanks (250 litres each) will be sourced from the existing two boreholes on site. Each Fish tank will be pumped with 200 litres of water per week. Six waste water tanks, with a volume of 5 000 litres and a height of 1.2 m each, will be installed on site. The effluent produced will be used to irrigate vegetable gardens which will be established on site. The remaining waste water will be sold to Non-Profit Organisations to irrigate their own vegetable gardens. The proposed development will therefore not utilise intensive technologies, which require high energy demand. The proposed development will require very little energy and will use resource saving techniques.

A.4 Physical Size of the Activity

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Proposed activity (*Total environmental (landscaping, parking, etc.) and the building footprint*)

Size of the activity:

Approximately 10 ha

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Ha/ m²

or, for linear activities:

Proposed activity

Length of the activity:

N/A

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Proposed activity

Size of the site/servitude:

10 ha

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Ha/m²

A.5 Site Access

Proposal

Does ready access to the site exist, or is access directly from an existing road?

YES

If NO, what is the distance over which a new access road will be built

N/A

Describe the type of access road planned:

N/A: existing access

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 1

Does ready access to the site exist, or is access directly from an existing road?

YES

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 2

Does ready access to the site exist, or is access directly from an existing road?

YES

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been duplicated

0

Number of times

(only complete when applicable)

A.6 Layout or Route Plan

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
 - A4 size for activities with development footprint of 10sqm to 5 hectares;
 - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
 - A2 size for activities with development footprint of >20 hectares to 50 hectares);
 - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
 - A0 = 1: 500
 - A1 = 1: 1000
 - A2 = 1: 2000
 - A3 = 1: 4000
 - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
 - Rivers and wetlands;
 - the 1:100 and 1:50 year flood line;
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

Note from CSIR: A Locality map depicting the proposed fish facility on the farm has been included as Appendix A. Photographs indicating sensitive features on site can also be found in this Appendix and in the Geo-hydrological, Heritage and Agricultural and Botanical survey (exempted) Reports attached as Appendix G.

FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be 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 locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or fishery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

A.7 Site Photographs

Colour photographs from the center 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 the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

Note from CSIR: Site photographs in the eight major compass directions have been included as Appendix B.

A.8 Facility Illustration

A detailed illustration of the activity must be provided at a scale of 1:200 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 to be attached in the appropriate Appendix.

Note from CSIR: An illustration of the structures for the current and proposed activities on site has been included as Appendix C.

SECTION B: SITE / AREA / PROPERTY DESCRIPTION

Note: Complete Section B for the proposal and alternative(s) (if necessary)

Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route times

N/A

Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives times
(complete only when appropriate)

Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

N/A

Section B - Section of Route (complete only when appropriate for above)

Section B - Location/route Alternative No. (complete only when appropriate for above)

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B.1 Property Description

Property description:

(Including Physical Address and Farm name, portion etc.)

Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province

B.2 Activity Position

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 decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:

Latitude (S):	Longitude (E):
-26.472282°	28.043592°

In the case of linear activities:

Alternative:

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S):	Longitude (E):

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached

The 21 digit Surveyor General code of each cadastral land parcel

PROPOSAL																						
Alt. 1	T	0	I	R	0	0	0	0	0	0	0	0	0	0	1	7	5	0	0	0	1	9
Alt. 2																						
etc.																						

B.3 Gradient of the Site

Indicate the general gradient of the site.

Flat	
------	--

B.4 Location in Landscape

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

	Plain	
--	-------	--

B.5 Groundwater, Soil and Geological Stability of the Site

a) Is the site located on any of the following?

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

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s) NO

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): _____ **Longitude (E):** _____

c) are any caves located within a 300m radius of the site(s) NO

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): _____ **Longitude (E):** _____

d) are any sinkholes located within a 300m radius of the site(s) NO

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): _____ **Longitude (E):** _____

If any of the answers to the above are “YES” or “unsure”, specialist input may be requested by the Department

B.6 Agriculture

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)? NO

Please note: The Department may request specialist input/studies in respect of the above.

B.7 Groundcover

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Please note no endangered species were noted on site.

Indicate the types of groundcover present on the site and include the estimated percentage found on site.

Natural veld - good condition % = 24.45	Veld dominated by alien species % = 36.87
--	--

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	Cultivated land % = 29.28		Building or other structure % = 4.63	Bare soil % = 4.77
--	------------------------------	--	---	-----------------------

Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site		NO
--	--	----

If YES, specify and explain:

Inputs from the Ecological site visit undertaken by the CSIR on the 30 June 2017 and 10 November 2017

The vegetation on site was found to be modified from the reference state of Soweto Highveld Grassland Figure 8 below. The site was rated as being of low sensitivity as it was considered to be modified with a low indigenous species diversity. Dominant alien floral species were *Populus alba*, *Tithonia diversifolia*, *Verbena bonariensis*, *Bidens pilosa*, and *Pennisetum clandestinum*. *Populus alba*, *Tithonia diversifolia* and *Verbena bonariensis* are classified as alien and invader species according to the Conservation of Agricultural Resources Act (CARA, 1983) and National Environmental Management Biodiversity Act (Act no 10 of 2004) (NEMBA). A biome map showing that the project is located in the Grassland Biome is provided in Figure 9.

In terms of Section 12(1) and Section 15(1) of the National Forests Act 1998 (Act No 84 of 1998) allows for the declaration of a tree, a group of trees, woodland or a species of trees as protected. A list of species was published under Government Notice (GN) 716 in Government Gazette (GG) 35648 of 7 September 2012. No Protected species were recorded on site. Under Section 15(1) of the National Forests Act (Act No 84 of 1998) No person may - a) cut, disturb, damage or destroy any protected tree; or b) possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, or any forest product derived from a protected tree, without a under a licence granted by the Minister. A portion of the proposed site falls in the Ecological Support Area. The site where it has been zoned ESA consist of the existing structures (SANBI BGIs, 2018)



Figure 6: Vegetation on site



Figure 7: Vegetation on site

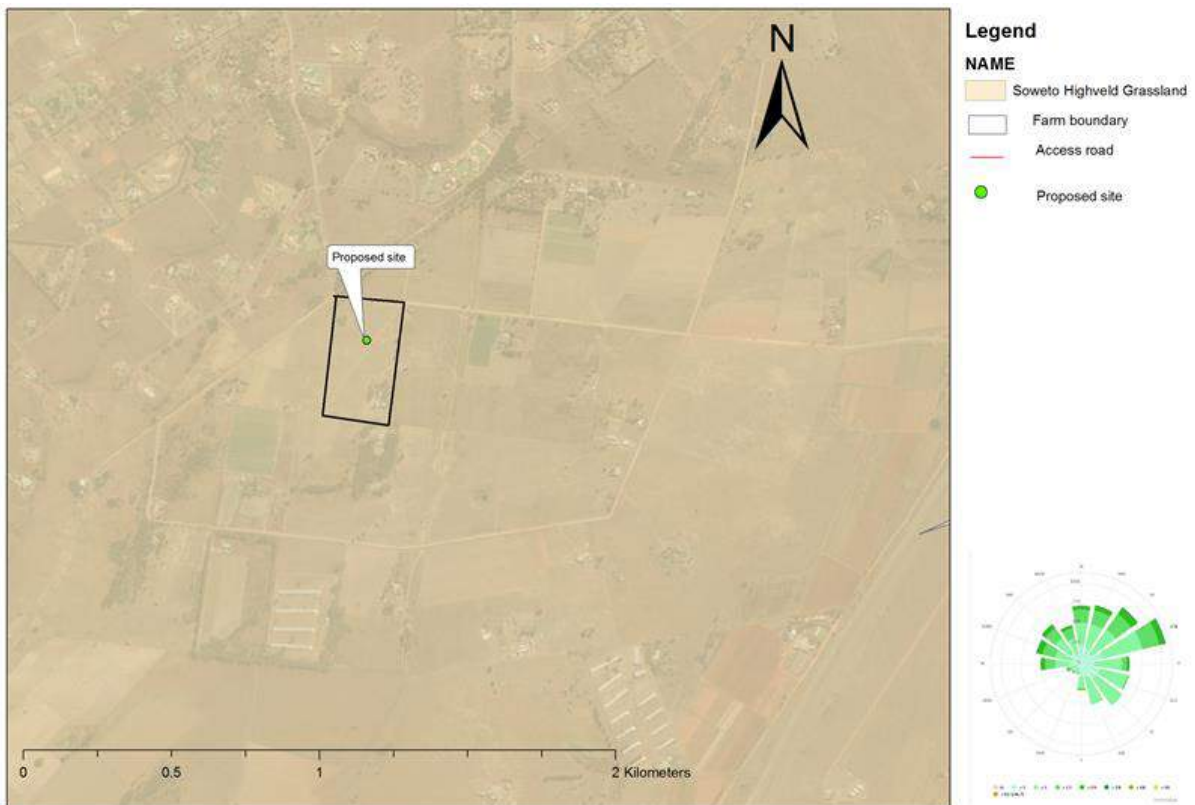


Figure 8: Vegetation map showing Soweto Highveld Grassland for the Kedake Resources (Pty) Ltd Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province (Data source SANBI)

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Figure 9: Biome map showing Grassland Biome for the Kedake Resources (Pty) Ltd Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province (Data source SANBI).

Are there any rare or endangered flora or fauna species (including red list species) present within a 200 m (if within urban area as defined in the Regulations) or within 600 m (if outside the urban area as defined in the Regulations) radius of the site.

	NO
--	----

If YES, specify and explain:

Are there any special or sensitive habitats or other natural features present on the site?

	NO
--	----

If YES, specify and explain:

No wetland or sensitive features have been identified on site

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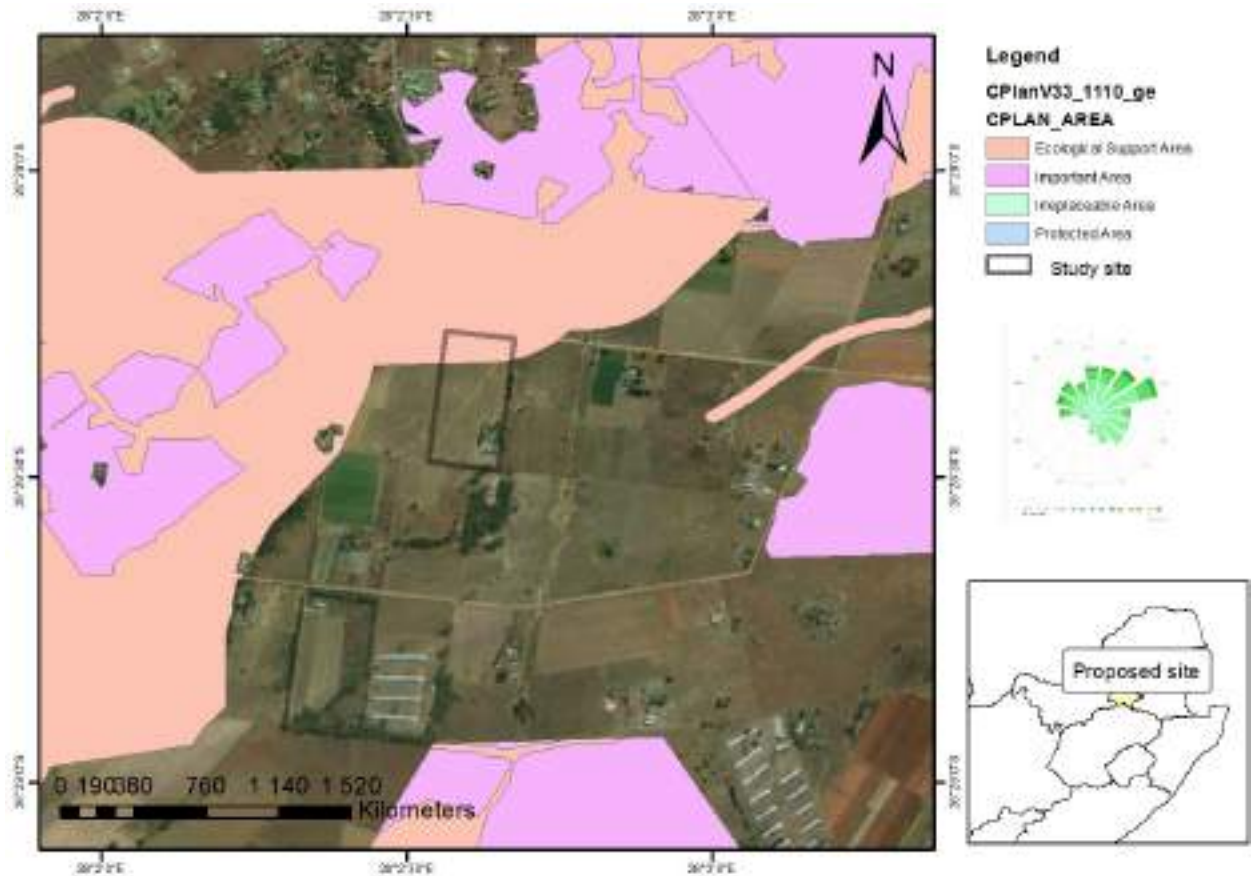


Figure 10: Gauteng CPlan map for the Kedake Resources (Pty) Ltd Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province (Data source SANBI).

Was a specialist consulted to assist with completing this section	YES	
If yes complete specialist details		
Name of the specialist:	HCAC - Heritage Consultants Mr. J. van der Walt	
Qualification(s) of the specialist:	MA Archaeology ASAPA #159	
Postal address:	Private Bag X 1049 Suite 34 Modimolle	
Postal code:	0510	
Telephone:	082 373 8491	Cell: [REDACTED]
E-mail:	jaco.heritage@gmail.com	Fax: [REDACTED]
Are any further specialist studies recommended by the specialist?	NO	
If YES, specify:	[REDACTED]	
If YES, is such a report(s) attached?	[REDACTED]	
If YES list the specialist reports attached below	[REDACTED]	

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YES	
-----	--

Was a specialist consulted to assist with completing this section
If yes complete specialist details

Name of the specialist:	Water Quality and Sustainable Yield Investigation		
	Dutoit Wilken		
Qualification(s) of the specialist:	Masters MSc. Environmental Science - 2015		
Postal address:	394 Tram Street New Muckleneuk Pretoria,		
Postal code:	0181		

Telephone:	012 460 9768	Cell:	
E-mail:	dutoit@envass.co.za	Fax:	

Are any further specialist studies recommended by the specialist? NO

If YES, specify: [REDACTED]

If YES, is such a report(s) attached? [REDACTED]

If YES list the specialist reports attached below
[REDACTED]

YES	
-----	--

Was a specialist consulted to assist with completing this section
If yes complete specialist details

Signature of See Note Below specialist: _____ Date:

Note from CSIR: Please see the Specialist Declaration as per Appendix 6 of the NEMA EIA Regulations 2014) on Page 5 of the Reports, attached as Appendix G.

Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

B.8 Land use Character of Surrounding Area

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

1. Vacant land	
	7. Agriculture
	34. Small Holdings

NOTE: Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

NORTH

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	34	34	7	34/7	1	
	34	1	7	34	34	
WEST	2	1	Site	2 / 34	34	EAST
	1	2	1	1	1	
	1	1	1	1	1	
						SOUTH

Note from CSIR: The proposed development is surrounded by a few holdings with some agricultural practices and the dwellings are fairly spaced apart. Please see locality and aerial maps for an indication of the holdings.

Note: More than one (1) Land-use may be indicated in a block

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an “A” and with an “N” respectively.

Have specialist reports been attached
If yes indicate the type of reports below

YES	
-----	--

According to Midvaal Local Municipality Development Planning and Housing Department (Ref 1440) the proposed site is zoned agriculture and as such Aquaculture and crop cultivation is permitted (see Appendix E).

The site is within a moderate potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas Figure 11 below.

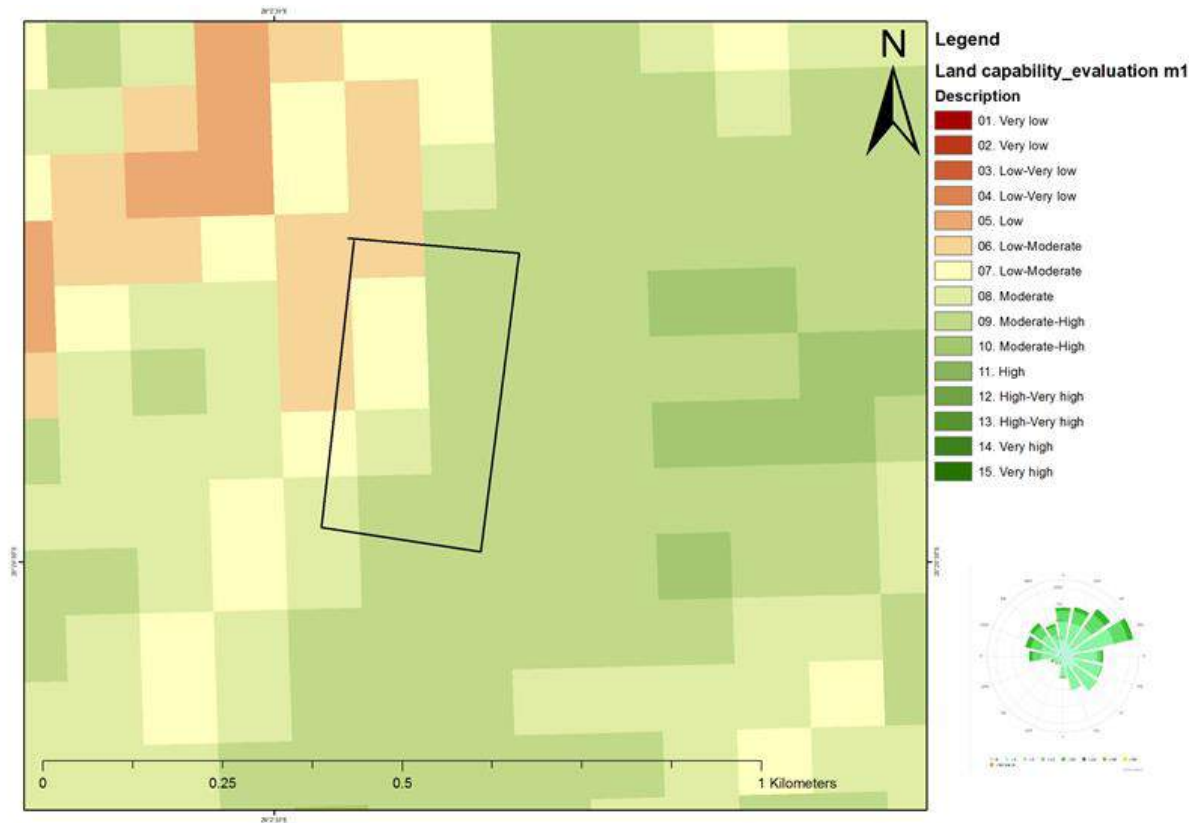


Figure 11: Land capability map for the Kedake Resources (Pty) Ltd Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province (Data source SANBI).

B.9 Socio-Economic Context

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

Kedake Resources (Pty) Ltd Fish Farming project site is situated in the Midvaal Local Municipality, within the Sedibeng District Municipality in Gauteng. The Midvaal Local Municipality is approximately 1722 km² and 95 301 people in 29 965 households. Fifty one percent of the population is male with 46.12% being female. The growth rate of the population from 2001-2011 is 3.9%, which is higher than the average growth rate of the Sedibeng District over the same time period. Midvaal Local Municipality is an administrative area in the Sedibeng district of Gauteng. The name was given due to its geographical location. Midvaal lies between Johannesburg and the East Rand and the Vaal River and Vereeniging.

The total population of people residing in Midvaal has grown over the years and according to Statistics South Africa (2011), Midvaal Local Municipality has a total population of 95,301. This number shows a population growth from 64,640 in 2001 to 95,301 in 2011. Although the population in Midvaal has grown at an average of 4%, it is expected that the population will double in anticipation of future housing opportunities such as the Savanna City Development, with an estimated population of about 90,000 people expected to reside in Savanna City over the next 10 years.

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Approximately 18.6 % of the population of the municipality is unemployed at present. This is lower than the Sedibeng District Average (32%) and the Gauteng unemployment level (26.3%). Average household income is ZAR145 180 per annum.

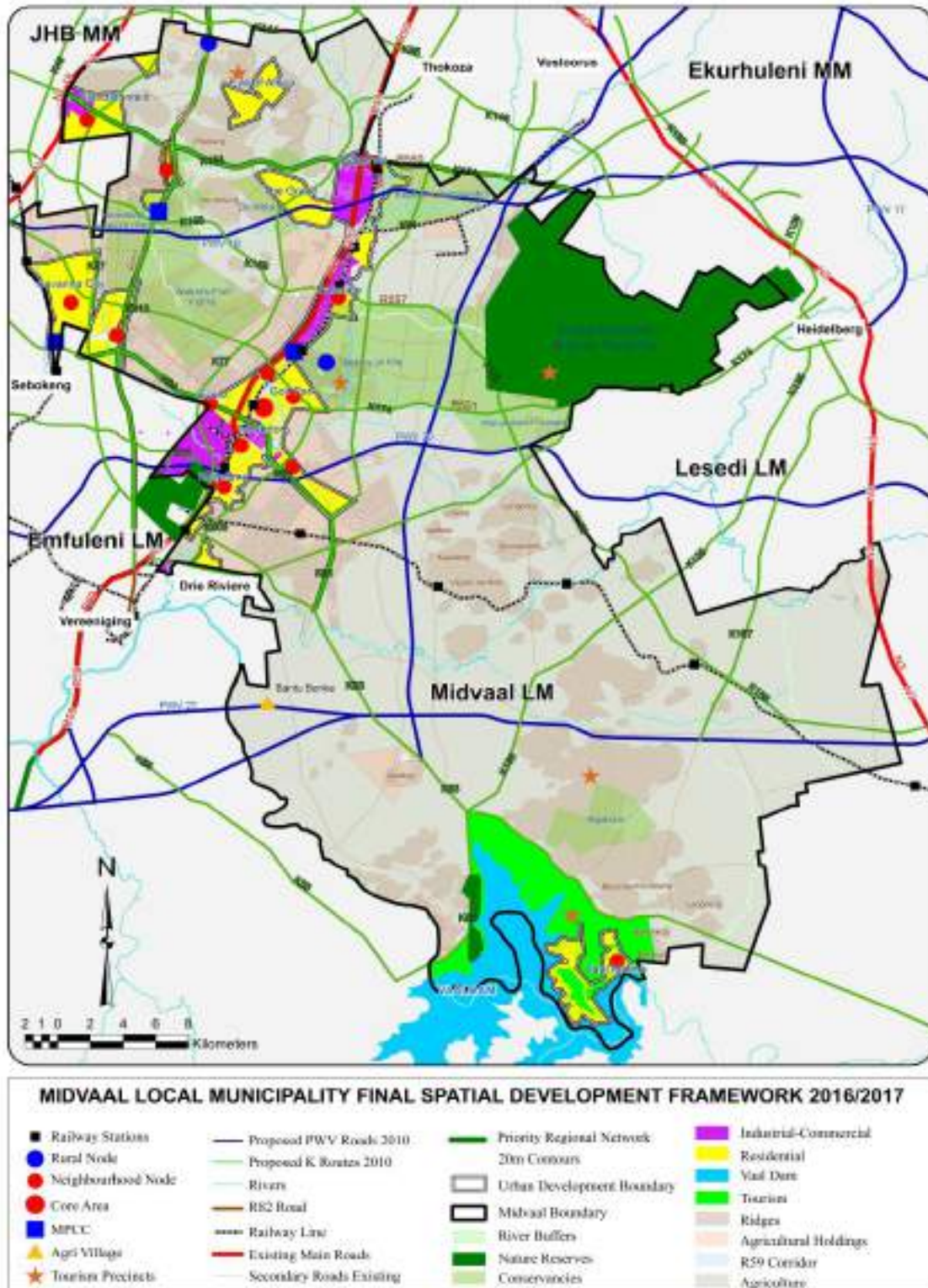


Figure 12: Midvaal Local Municipality Final Spatial Development Framework 2016/2017

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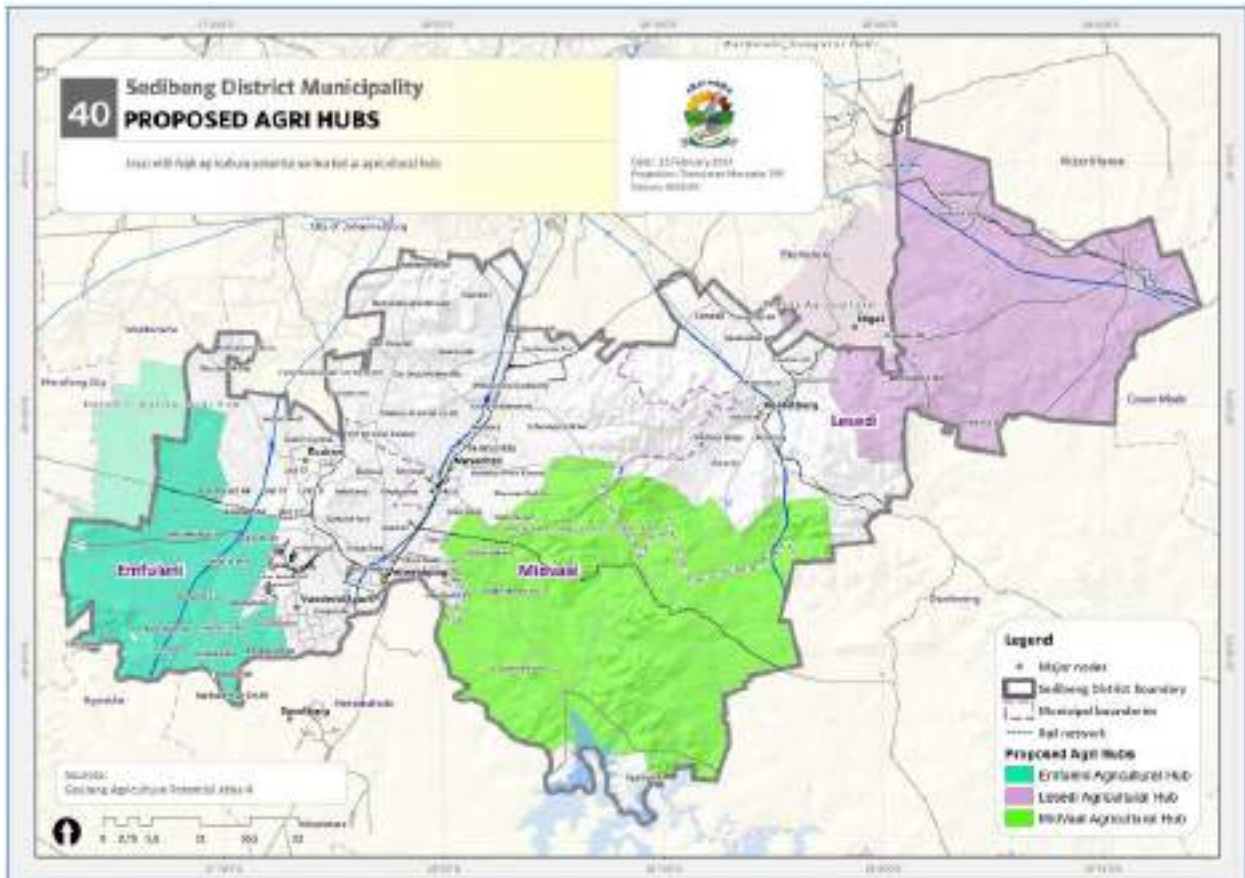


Figure 13: Proposed Agricultural Hub (IDP, 2017)

Furthermore Gauteng has established agricultural hubs in order to boost agricultural economy and job creation. This led to the identification of the Midvaal agricultural Hub, adjacent to the proposed development. These agricultural hubs are aimed at boosting agricultural products for local, National and international markets. The SDF further outlines the need for sustainable development of agricultural land which is driven by the following factors:

- Agricultural land is a limited natural resource
- Food security
- Climate change

It is therefore necessary to preserve land with high-potential agricultural solids based on the principles of sustainable development. This will ensure food security, even if such land is not currently used for agricultural purposes and also create awareness about the value of agricultural land and the need to preserve it.

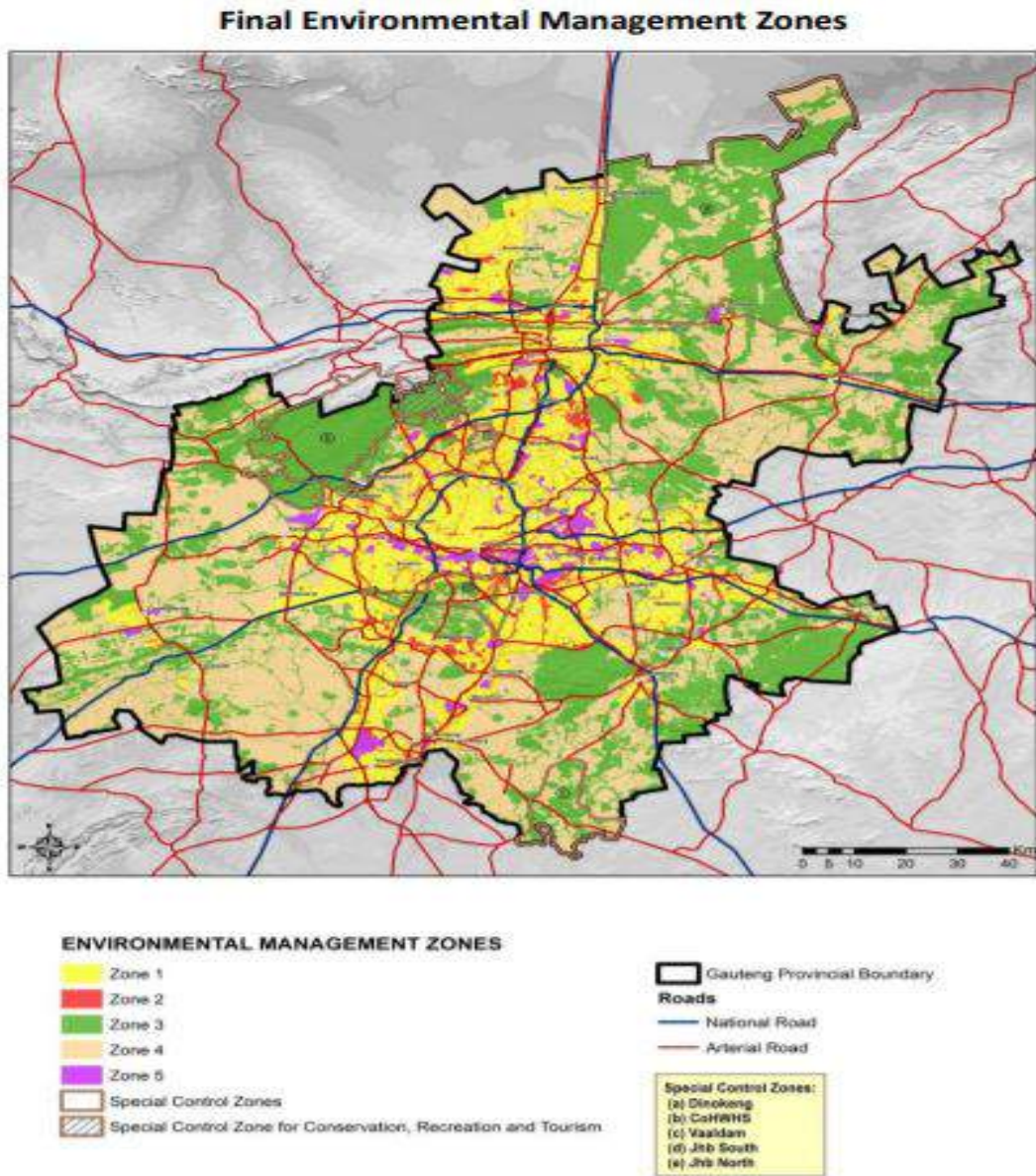


Figure 14: Environmental management zones (IDP, 2017)

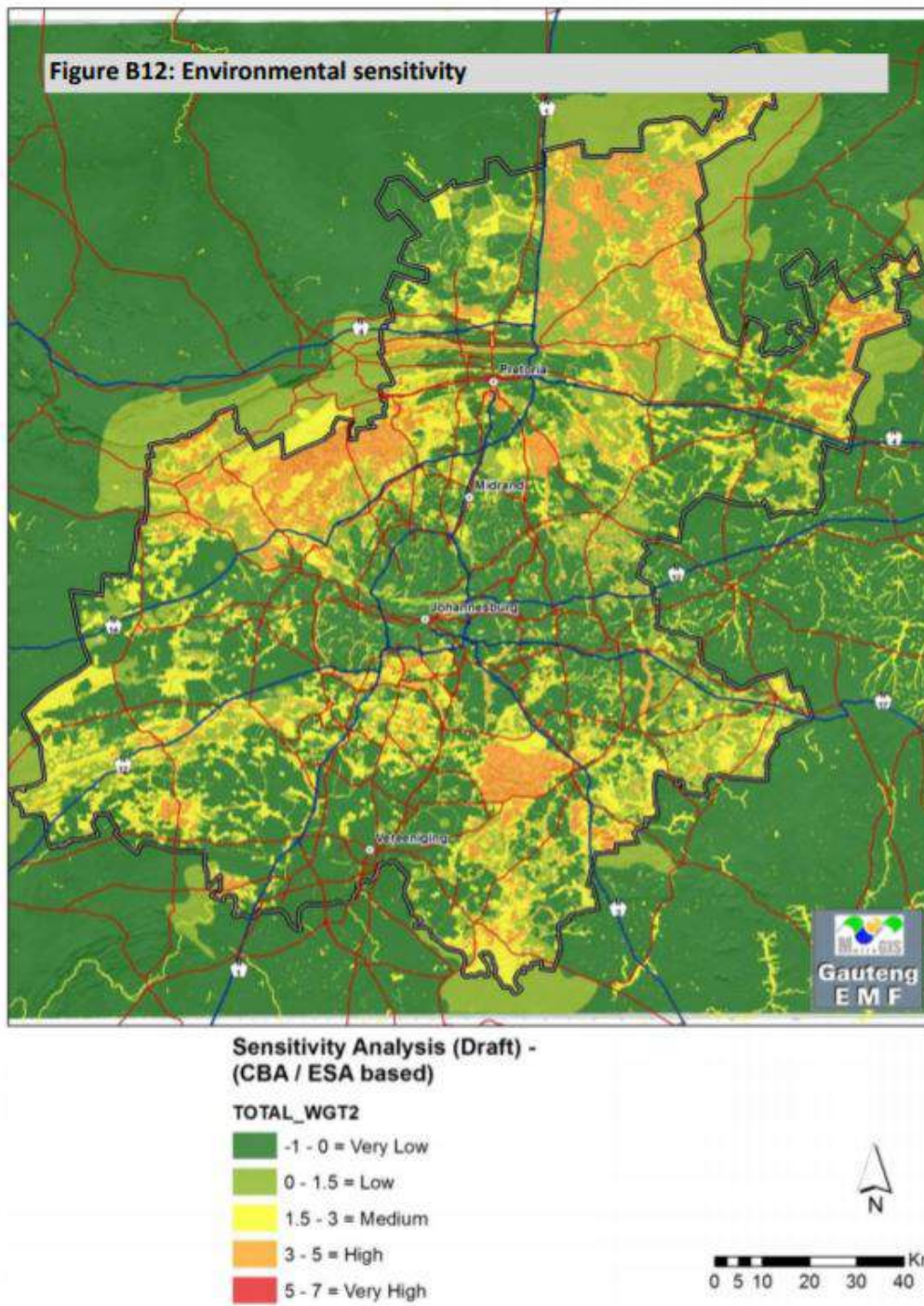


Figure 15: Environmental sensitivity (IDP, 2017)

The spatial structure of the Midvaal Local Municipal area is predominantly that of a rural area with extensive farming constituting approximately 50 % of the total area of jurisdiction. There are two significant natural features impacting on the physical structure, namely the Suikerbosrand Nature Reserve and the Vaal River which forms the Southern boundary of both the municipality and the Gauteng Province. According to the SDF,EMF and the IDP the proposed site falls within the

Agricultural hub and the environmental sensitivity are low to Moderate see figure 13, 14 and 15 above.

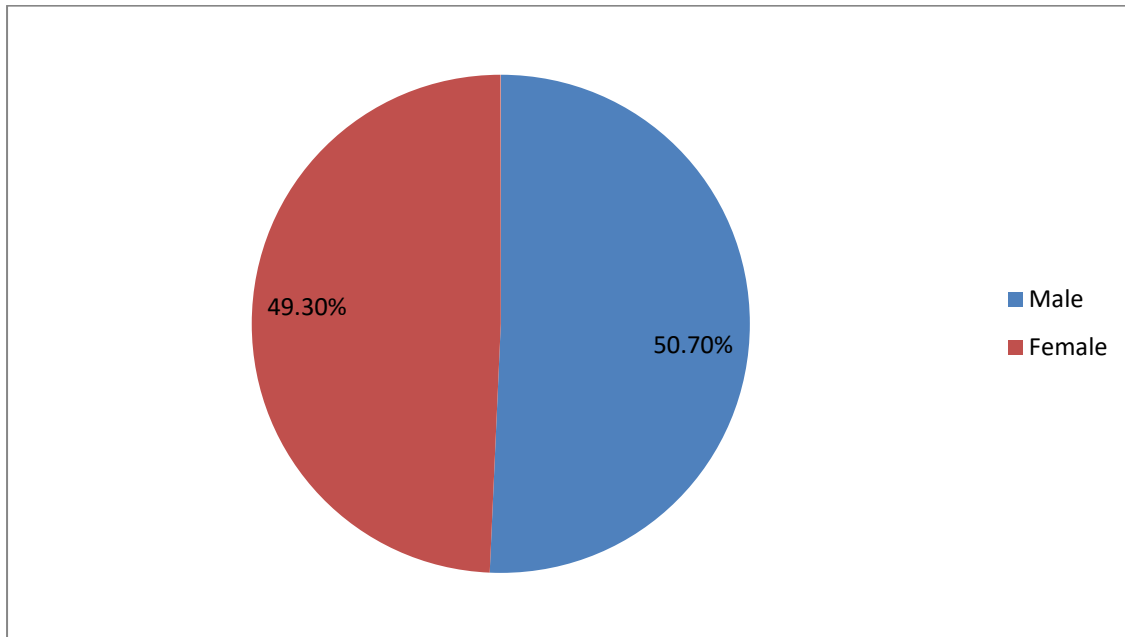


Figure 16: Population gender of the Meyerton (Data source STATSSA, 2018)

According to Stats SA Meyerton was established in 1891 on the farm Rietfontein and was possibly named after J P Meyer, member of the Transvaal Volksraad. (GPS coordinates: 26.5819 S, 28.0272 E). Figure 16 above depicts the gender of the Meyerton where 50.7% are male and 49.3% are female.

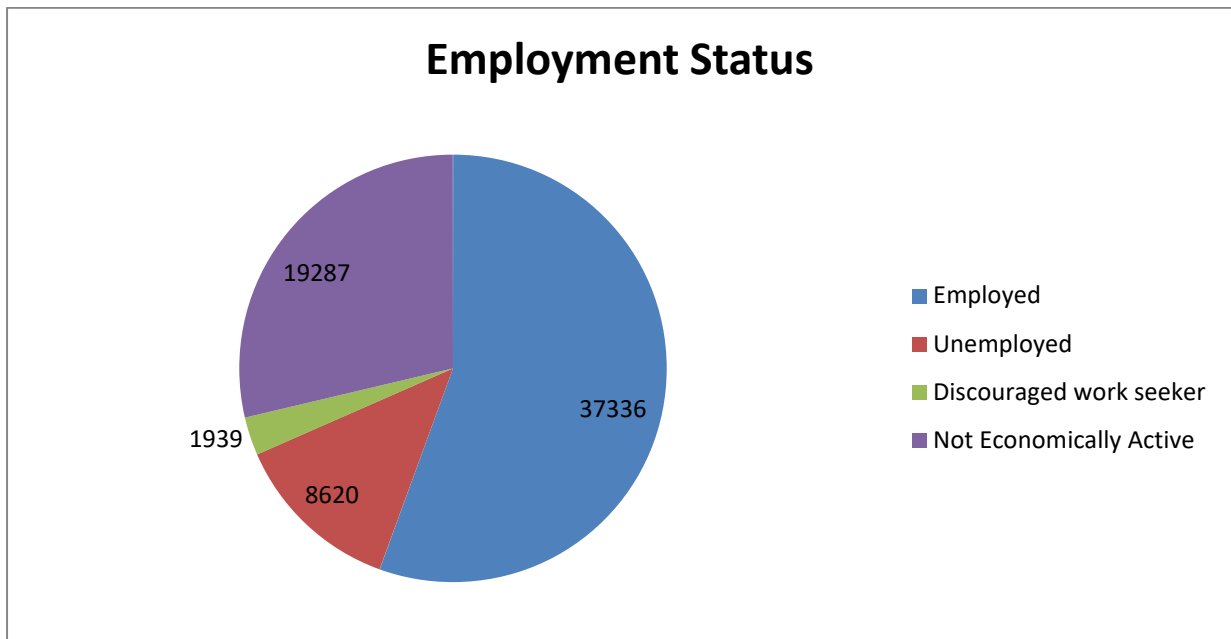


Figure 17: Number of people employed (data source STATSSA, 2018)

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The level of household income defines the magnitude of welfare of an area. According to the 2011 census statistics, majority 37336 of people are employed, 19287 people are not economically active 8620 people are unemployed whereas 1939 number of people are discouraged workers.

Income	Percentage
No Income	14,5%
R1 - R4,800	3,2%
R4,801 - R9,600	4,9%
R9 601 - R19,600	14,8%
R19,600 - R38, 200	16,4%
R38,201 - R76,4000	12,4%
R76,401 -R153, 800	10,3%
R153, 801 - R307,600	10,9%
R307,601 - R614,400	8,3%
R614,001 - R1,228,800	3,1%
R1,228,801 - R2,457,600	0,7%
R2,457,601+	0,5%

Figure 18: Average annual income (Data source STATSSA, 2018)

The Census 2011 indicates that approximately 16% of the people in Meyerton earn between R19 600 - R38 200 annually whereas approximately 14,5% have no income. Majority of the people in Meyerton earn basic salaries according to the Figure 18 above

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Anticipated CAPEX value of the project on completion	Approximately R2.5 million
What is the expected annual income to be generated by or as a result of the project?	Approximately R450 000
New skilled employment opportunities created in the construction phase of the project	Bricklaying, Welding and power tools operations (approximately 2 + 1 supervisor - number will depend on the contractors executing the work)
New skilled employment opportunities created in the operational phase of the project	1 part-time multi-skilled labour for electrical and mechanical work 1 Farm manager 2 Fish supervisor + 1 crops supervisor
New un-skilled employment opportunities created in the construction phase of the project	General labour (approximately 6 - quantity dependent on the contractors executing work)
New un-skilled employment opportunities created in the operational phase of the project	8 General Labour 10 Seasonal workers for vegetables.
What is the expected value of the employment opportunities during the operational and construction phase?	R450 000 per annum for operational (Current Value) R250 000 for construction
What percentage of this value that will accrue to previously disadvantaged individuals?	80% of construction phase 100 % of operational phase
What percentage of this value that will accrue to previously disadvantaged individuals?	Same as above
The expected current value of the employment opportunities during the first 10 years	R4.5 million
What percentage of this value that will accrue to previously disadvantaged individuals?	100%

B.10 Cultural/historical Features

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) - Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50m in length;

(c) any development or other activity which will change the character of a site-

(i) exceeding 5 000 m² in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10 000 m² in extent; or

(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

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Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?

	NO
--	----

If YES, explain:

N/A

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

No archaeological sites or material of significance was recorded during the survey. A paleontological desktop study was conducted by Rossouw (2017) that concluded:

It is recommended that the development may proceed without a phase 1 impact study, provided that any activity that will require > 1m deep x 1m2 excavations into unweathered sedimentary bedrock within the proposed footprint will require once off monitoring by a professional palaeontologist during the construction phase of the development in case of chance exposure of stromatolite fossil remains, while such excavations are still open “. No further mitigation prior to construction is recommended in terms of the archaeological and paleontological components of Section 35 for the proposed development to proceed.

In terms of the built environment of the area (Section 34), no standing structures older than 60 years occur within the study areas. In terms of Section 36 of the Act no burial sites were recorded. If any graves are located in future they should ideally be preserved in-situ or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area. The area is rural in character and the proposed project is in line with the current land use and will not impact negatively on significant cultural landscapes or views capes. During the public participation process conducted for the project no heritage concerns was raised.

Due to the lack of significant heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence on the condition that the following recommendations are implemented as part of the EMPr and based on approval from SAHRA

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 attached the comments from SAHRA in the appropriate Appendix

Note from CSIR: A heritage study was submitted to South African Heritage Resources Agency (SAHRA) via the SAHRIS portal See Appendix F

SECTION C: IMPACT ASSESSMENT

C.1 The Environmental Assessment Practitioner must conduct Public Participation Process in accordance with the requirement of the EIA Regulations, 2014.

C.2 Local authority participation

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?

NO

The draft report will be submitted to the local authority for comment during the 30-day reviewing Process (the current stage of the project).

If yes, has any comments been received from the local authority?

NO

It is anticipated that comments will be received during the 30-day reviewing Process (the current stage).

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

This Draft report is hereby released for a 30-day commenting period. The comments will be incorporated into the final BA Report which will be submitted to GDARD for decision-making.

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

The Draft BAR is only released now and will be submitted to the local authority for comment.

C.3 Consultation with other stakeholders

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Comment 1: received from Neighbour Naomi du Plessis Danie du Plessis

There is a huge storm water problem in the area of which the Midvaal municipality is trying to resolve the problem.

Comment 2: received from Mr. Thys Arlow Director: Development and Planning Midvaal.

Biggest concern is how resource intensive is this operation going to be? Will water be extracted from borehole? How much water? The proposed site is in an area that could be underline by Dolomite, Water extraction might be a problem.

Comment 3: received from Sifiso Ngubeni: Gauteng Department of Health - Sedibeng District

Fauna and flora impacts when removing natural vegetation or ecological system on the proposed area. Noise impacts which may arise from the construction and production of the business. Noise impacts which may arise from the construction and production of the business. Noise impacts which may arise from the construction and production of the business. Nuisance impacts from all the processes of the business. Impacts form diseases vectors such as Malaria or Bilharzia due to a large use or consumption of water during production and processing.

Comment Please describe any issues or concerns you may have regarding the proposed project, which you think should be considered during the Basic Assessment Process.

- Water Usage
- Pollution and risks of smells
- Hygiene re fish processing
- Waste
- Breeding stock source

Comment 4 : Received from Sean Freeman Heirloom Vegetable seeds Livingseeds

We would like to place of record our support and agreement for this aquaculture project.

Living seeds Heirloom Seed (Pty) Ltd is the owner of 2 properties (one adjacent) and the directors of Living seeds personally own a third property in Klipview.

We are interested and affected parties, in the sense that we grow vegetable seed for a living, and use groundwater to achieve this end. However we have no objection to both the described water-use, and the aquaculture farm.

We would like to take this opportunity to place on record that we believe this is a valuable and desirable enterprise to be undertaken in our community.

If "NO" briefly explain why no comments have been received

N/A

C.4 General public participation requirements

The Environmental Assessment Practitioner must ensure that the public participation process is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was flawed.

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The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

C.5 Appendices for public participation

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below:

Appendix 1	Proof of site notice
Appendix 2	Written notices issued as required in terms of the regulations
Appendix 3	Proof of newspaper advertisements
Appendix 4	Communications to and from interested and affected parties
Appendix 5	Minutes of any public and/or stakeholder meetings - N/A
Appendix 6	Comments and Responses Report
Appendix 7	Comments from I&APs on Basic Assessment (BA) Report
Appendix 8	Comments from I&APs on amendments to the BA Report - N/A at this stage of the BA process
Appendix 9	Copy of the register of I&APs

SECTION D: PUBLIC PARTICIPATION

Note: Section D is to be completed for the proposal and alternative(s) (if necessary)

Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 2) Each alternative needs to be clearly indicated in the box below
- 3) Attach the above documents in a chronological order

Section D has been duplicated for alternatives times (complete only when appropriate)

Section D Alternative No. (complete only when appropriate for above)

D.1 Waste, Effluent, and Emission Management

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? 10m³

How will the construction solid waste be disposed of (describe)?
Anticipated construction solid waste to be produced includes building rubble, packaging material, overburden material and general litter from construction staff. It is recommended that construction waste/rubble will be collected and stored temporarily in designated containers for the different waste types, and thereafter disposed of at the nearest appropriate licenced waste disposal site.

Where will the construction solid waste be disposed of (describe)?
Waste will be disposed of at an appropriate licenced landfill site, possibly the Meyerton Landfill Site in Midvaal which is the nearest landfill site to dispose of building rubble.

Will the activity produce solid waste during its operational phase? YES
 If yes, what estimated quantity will be produced per month? Fish waste = 48m³
Other waste = 1.4m³

How will the solid waste be disposed of (describe)?
Solid waste generated during the operational phase will be stored in suitable bins and transported to the nearest licenced disposal site. Medical waste such as needles will be disposed of through existing medical waste streams in the area. Fish waste will be stored in the slurry dam and used as fertilizer in the agricultural activities on site.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity? NO
 Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?
All waste generated, except for fish waste, will always be disposed of at a registered disposal site.

Note: 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, 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 relevant legislation? NO

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If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? YES 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.

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

The suspended solid fish waste will be collected and stored on a concrete surface and composted. It will then be subjected to the aerobic process for two weeks to reduce its odour and moisture. The solid waste will thereafter be recycled and used to fertilise the soils of the vegetable crops in the farm. Recyclable waste such as plastic, glass, paper etc will be taken to the nearest recycling warehouse.

Liquid effluent (other than domestic sewage)

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? YES NO

If yes, what estimated quantity will be produced per month?

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)? YES NO

Will the activity produce any effluent that will be treated and/or disposed of on site? YES NO

If yes, what estimated quantity will be produced per month?

If yes describe the nature of the effluent and how it will be disposed.

The solids will be composted and applied to the agricultural field and a fraction of the waste water which will not be used for cleaning purposes will also be irrigated onto the vegetables. These practices will be in accordance with the recommendations of Section 21 (e) of the National Water Act The use of waste water for agricultural purposes is in accordance with the Department of Water Affairs' recognition of waste water as a valuable resource for use as a fertilizer.

Note that if effluent is to be treated or disposed on site 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? YES NO

If yes, provide the particulars of the facility:

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

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

The waste water produced will be used to irrigate the vegetables on site

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system? YES NO

If yes, what estimated quantity will be produced per month?

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)? YES NO

Will the activity produce any effluent that will be treated and/or disposed of on site? YES NO

If yes describe how it will be treated and disposed off.

Emissions into the atmosphere

Will the activity release emissions into the atmosphere? YES NO

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If yes, is it controlled by any legislation of any sphere of government? YES 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.

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

Emissions from the proposed fish facility will include dust from vehicles using the gravel access road; this will however be minimal as the proposed development will not result in a significant increase of traffic. Dust will also be as a result of preparing the land and/or due to construction. Emissions will also include odour from the fishery waste and may cause a nuisance to the receptors.

D.2 Water Use

Indicate the source(s) of water that will be used for the activity

groundwater surface water other

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:

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs? YES NO

If yes, list the permits required

The proposed activity will require the use of approximately 432 m³ per annum to be obtained from ground water sources. Water requirements will incorporate domestic water use. Therefore a water use licence is required for the facility as it triggers Section 21(a) and (b) of the National Water Act 36 of 1998 (NWA). The proposed activity will also require a water use licence in terms of Section 21(e) of the NWA. The Schedule provides: "general authorisation which replaces the need for a water user to apply for a licence in terms of the Act, provided that the water use is within the limits and conditions as set out in this general authorization." The use of biodegradable wastewater, such as that proposed the proposed facility on agricultural land, is part of a general authorization regarded as a Controlled Water Use Activity, provided that the activity complies with the conditions specified in Government Notice No. 665 of 6 September 2013 (National Water Act, Act 36 of 1998).

If yes, have you applied for the water use permit(s)? YES NO

If yes, have you received approval(s)? (attached in appropriate appendix) YES NO

D.3 Power supply

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

If power supply is not available, where will power be sourced from?

D.4 Energy efficiency

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

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Solar powered panels will be utilized at the farm for lighting and abstracting the bore-hole water from the ground. This will assist the fish to be self-sustainable in terms of electricity, to reduce the need to rely on Eskom or in the case that Eskom does not supply power to the plot. The farm will make use of energy efficient light bulbs for lighting.

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

None

SECTION E: RECOMMENDATION OF PRACTITIONER

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, 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 as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

E.1 Issues raised by Interested and Affected Parties

Summarise the issues raised by interested and affected parties.

Issues raised by Interested and Affected Parties following the release of the Background Information Document released on the 09th October 2017, prior to the release of the Draft Basic Assessment Report and post Draft BA are attached at in **Section 3** of this report.

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included).

(A full response must be provided in the Comments and Response Report that must be attached to this report):

The erosion potential for the site has been addressed in the EMPr attached. According to this report, the potential is of low significance when mitigation and management actions are implemented. A full response to this comment is also provided in the Comments and Responses Report included in the attached Appendix E.

E.2 Impacts that may result from the Construction and Operational Phase

Briefly describe the methodology utilised in the rating of significance of impacts

APPROACH TO THE BASIC ASSESSMENT

1) METHODOLOGY OF IMPACT ASSESSMENT

According to the DEA IEM Series guideline on "Impact Significance" (2002), there are a number of quantitative and qualitative methods that can be used to identify the significance of impacts resulting from a development. The process of determining impact significance should ideally involve a process of determining the acceptability of a predicted impact to society. Making this process explicit and open to public comment and input would be an improvement of the EIA/BA process. The CSIR's approach to determining significance is generally as follows:

- Use of expert opinion by the specialists ("professional judgement"), based on their experience, a site visit and analysis, and use of existing guidelines and strategic planning documents and conservation mapping (e.g. SANBI biodiversity databases);
- Review of specialist assessment by all stakeholders including authorities such as nature

conservation officials, as part of the report review process (i.e. if a nature conservation official disagreed with the significance rating, then we could negotiate the rating); and

- Our approach is more a qualitative approach - we do not have a formal matrix calculation of significance as is sometimes done.

2) SPECIALIST CRITERIA FOR IMPACT ASSESSMENT

The following methodology has been provided by the CSIR to the specialist who conducted the **Assessment of Potential Impacts**

The assessment of impact significance is based on the following conventions:

Nature of Impact - this reviews the type of effect that a proposed activity will have on the environment and should include “what will be affected and how?”

Spatial Extent - this should indicate whether the impact will be:

- Site specific;
- Local (<2 km from site);
- Regional (within 30 km of site); or
- National.

Duration - The timeframe during which (lifetime of) the impact will be experienced:

- Temporary (less than 1 year);
- Short term (1 to 6 years);
- Moderate term (6 to 15 years);
- Long term (the impact will cease after the operational life of the activity); or
- Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient).

Intensity - it should be established whether the impact is destructive or innocuous and should be described as either:

- High (severe alteration of natural systems, patterns or processes such that they temporarily or permanently cease);
- Moderate (notable alteration of natural systems, patterns or processes; where the environment continues to function but in a modified manner); or
- Low (negligible or no alteration of natural systems, patterns or processes); can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making.

Probability - this considers the likelihood of the impact occurring and should be described as:

- Improbable (little or no chance of occurring);
- Probable (<50% chance of occurring);
- Highly probable (50 - 90% chance of occurring); or
- Definite (>90% chance of occurring).

Reversibility - this considers the degree to which the adverse environmental impacts are reversible or irreversible. For example, an impact will be described as low should the impact have little chance of being rectified to correct environmental impacts. On the other hand, an impact such as the nuisance factor caused by noise impacts from wind turbines can be considered to be highly reversible at the end of the project lifespan. The assessment of the reversibility of potential impacts is based on the following terms:

- High - impacts on the environment at the end of the operational life cycle are highly reversible;

- Moderate - impacts on the environment at the end of the operational life cycle are reasonably reversible;
- Low - impacts on the environment at the end of the operational life cycle are slightly reversible; or
- Non-reversible - impacts on the environment at the end of the operational life cycle are not reversible and are consequently permanent.

Irreplaceability - this reviews the extent to which an environmental resource is replaceable or irreplaceable. For example, if the proposed project will be undertaken on land that is already transformed and degraded, this will yield a low irreplaceability score. The assessment of the degree to which the impact causes irreplaceable loss of resources is based on the following terms:

- High irreplaceability of resources (this is the least favourable assessment for the environment);
- Moderate irreplaceability of resources;
- Low irreplaceability of resources; or
- Resources are replaceable (this is the most favourable assessment for the environment).

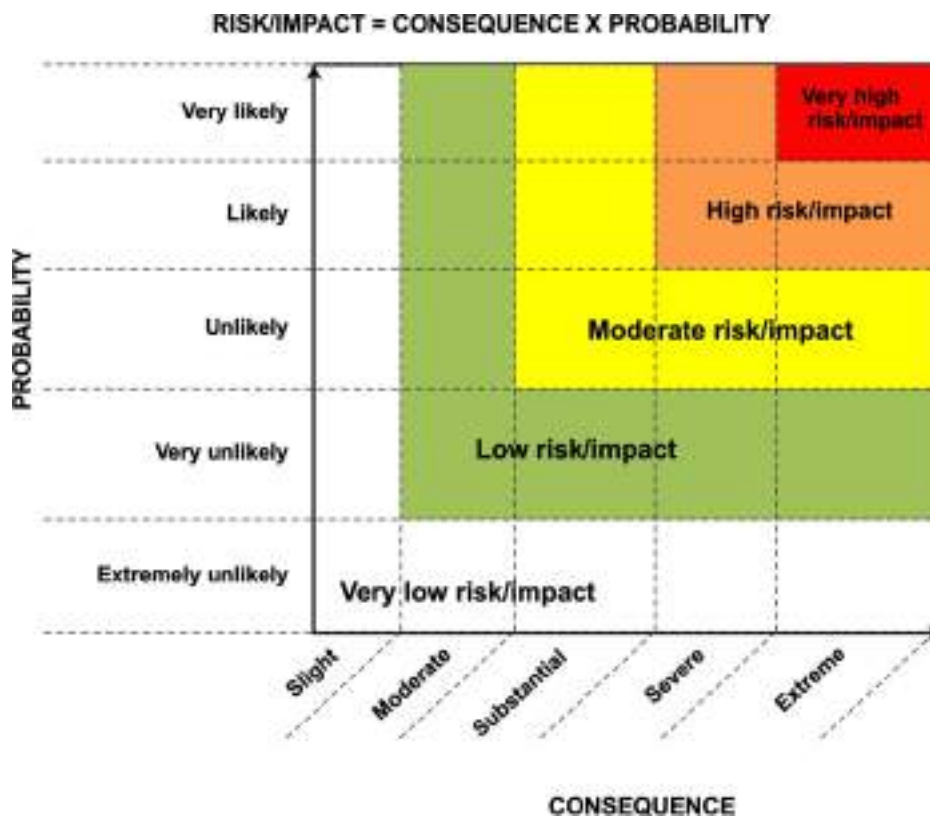


Figure 19: Guide to assessing risk/impact significance as a result of consequence and probability.

The status of the impacts and degree of confidence with respect to the assessment of the significance is stated as follows:

Status of the impact: A description as to whether the impact will be:

- Positive (environment overall benefits from impact);
- Negative (environment overall adversely affected); or
- Neutral (environment overall not affected).

Degree of confidence in predictions: The degree of confidence in the predictions, based on the availability of information and specialist knowledge. This should be assessed as:

- High;
- Moderate; or
- Low.

Based on the above considerations, the specialist provides an overall evaluation of the significance of the potential impact, which should be described as follows:

- **Low to very low:** the impact may result in minor alterations of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated;
- **Moderate:** the impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated; or
- **High:** Where it could have a “no-go” implication for the project unless mitigation or re-design is practically achievable.

Furthermore, the following must be considered:

- Impacts should be described both before and after the proposed mitigation and management measures have been implemented.
- All impacts should be evaluated for the construction, operation and decommissioning phases of the project, where relevant.
- The impact evaluation should take into consideration the cumulative effects associated with this and other facilities which are either developed or in the process of being developed in the region, if relevant.

Management Actions:

- Where negative impacts are identified, mitigatory measures will be identified to avoid or reduce negative impacts. Where no mitigatory measures are possible this will be stated.
- Where positive impacts are identified, augmentation measures will be identified to potentially enhance these.
- Quantifiable standards for measuring and monitoring mitigatory measures and enhancements will be set. This will include a programme for monitoring and reviewing the recommendations to ensure their ongoing effectiveness.

Monitoring:

Specialists should recommend monitoring requirements to assess the effectiveness of mitigation actions, indicating what actions are required, by whom, and the timing and frequency thereof.

Cumulative Impact:

Consideration is given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts are evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, Moderate or high impact.

Mitigation:

The objective of mitigation is to firstly avoid and minimise impacts where possible and where these cannot be completely avoided, to compensate for the negative impacts of the development on the receiving environment and to maximise re-vegetation and rehabilitation of disturbed areas. For each impact identified, appropriate mitigation measures to reduce or otherwise avoid the potentially negative impacts are suggested. All impacts are assessed without mitigation and with the mitigation measures as suggested.

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Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Note from the CSIR: Feasible alternatives (i.e. location, activity and property alternatives) do not exist for the proposed project as this is the only land parcel that the owners were able to acquire, and it would not be economically feasible for the business to find and or purchase new property.

Table 2: Impacts associated with the Fish farming

Activity	Impact summary	Status	Extent	Duration	Intensity	Reversibility	Irreplaceability	Probability	Confidence	Significance without mitigation	Significance after mitigation	Proposed mitigation
CONSTRUCTION PHASE												
Direct Impacts	<i>Potential loss or degradation of the wetland as a result of project footprint or indirect impacts such as waste</i>	Negative	Site specific	Temporary (<2 years)	Low	High reversibility	Moderate irreplaceability	Low probability (10-25% chance)	High	Moderate	Low	<ul style="list-style-type: none"> ▪ No wetlands where identified onsite
	Impact of project footprint on hydrological systems in the region	Negative	Local	Long term	Low	Moderate	Moderate	Very likely	High	Moderate	Low	<ul style="list-style-type: none"> ▪ Footprint should be restricted to the proposed 10 hectares property, which avoids natural hydrological systems
	Impact of on ground water contamination	Negative	Local	Long term	Low	Moderate	Low irreplaceability	Very likely	High	Moderate	Low	<ul style="list-style-type: none"> ▪ During construction, it is likely that domestic waste would be generated by contractors and the site staff, which may result in groundwater contamination if not disposed of correctly. The domestic waste would have a low impact on the receiving environment, however it should be disposed of at a suitable landfill site only and good housekeeping practices should be implemented and maintained at the site.
	<i>Soil disturbance</i>	Negative	Site specific	Long term (>15 years)	Low	Moderate	Low irreplaceability	Very likely	High	High	Moderate	<ul style="list-style-type: none"> ▪ Dust control measures should be implemented during construction ▪ The denuded and disturbed areas on site should be landscaped and re-vegetated as soon as possible with indigenous plants.
	<i>Loss of terrestrial vegetation and faunal habitat</i> Although the site is situated in the Soweto Highland grasses Endangered vegetation type and Vulnerable Threatened Ecosystem, construction of the Aquaponics facility will result in destruction of an already transformed habitat.	Negative	Site specific	Long term (>15 years)	Low	High reversibility	Low irreplaceability	Low probability (10-25% chance)	High	Moderate	Low	<ul style="list-style-type: none"> ▪ Ensure that all infrastructure avoids all Very High and High sensitive areas ▪ Indigenous trees and shrubs should be established in the place of alien species ▪ Clearly demarcate or fence in the construction site. Relocate CI plant and animal specimens from the construction footprint, with advice from an appropriate specialist. ▪ Commence (and preferably complete) construction during winter, when the risk of disturbing growing plants should be least.
	<i>Loss of CI or medicinal flora</i>	Negative	Site specific	Temporary (<2 years)	Low	Moderate reversibility	Moderate irreplaceability	Low probability (10-25% chance)	Moderate	Moderate	Low	<ul style="list-style-type: none"> ▪ Obtain permits to remove CI species ▪ Transplant CI and medicinally important floral specimens from the infrastructure footprint to suitable locations in the surrounding area. ▪ Obtain guidance from a suitably qualified vegetation specialist or horticulturist regarding the collection, propagation/storage and transplantation of plants.
	<i>Loss of CI fauna</i>	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Moderate irreplaceability	Low probability (10-25% chance)	Moderate	Moderate	Low	<ul style="list-style-type: none"> ▪ Appoint an appropriate specialist to relocate CI fauna from vegetation, termitaria and soil that is removed from the infrastructure footprint. ▪ Commence (and preferably complete) construction during winter, when the risk of disturbing active (including breeding and migratory) animals, should be least. ▪ Check open trenches for trapped animals (e.g. hedgehogs, reptiles and frogs), and relocate trapped animals with advice from an appropriate specialist. ▪ Prohibit disturbance and persecution (e.g. poaching) of fauna, and introduction of pets and other alien fauna (apart from the production of fish). ▪ Provide notices and training to inform workers about dangerous animals (e.g. venomous snakes and scorpions) and prohibited activities (e.g. poaching) Walk fence lines to remove snares.
	<i>Introduction and proliferation of alien species</i>	Negative	Site specific	Temporary (<2 years)	Low	Moderate reversibility	Moderate irreplaceability	Probable (25-50% chance)	High	Moderate	Low	<ul style="list-style-type: none"> ▪ Carefully regulate / limit access by vehicles and materials to the construction site. Demarcate or fence in the construction area. ▪ Prohibit the introduction of domestic animals such as dogs and cats. ▪ Remove any woody alien species that germinate. ▪ Plant only locally indigenous flora if landscaping needs to be done ▪ Keep construction activities neat and tidy. When complete, remove all sand

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Activity	Impact summary	Status	Extent	Duration	Intensity	Reversibility	Irreplaceability	Probability	Confidence	Significance without mitigation	Significance after mitigation	Proposed mitigation
												<ul style="list-style-type: none"> piles and landscape all uneven ground while re-establishing a good topsoil layer Remove Category species using mechanical methods, and minimize soil disturbance as far as possible.
	<i>Increased dust and erosion</i>	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	Moderate	Moderate	Low	<ul style="list-style-type: none"> Limit vehicles, people and materials to the construction site. Commence (and preferably complete) construction during winter, when the risk of erosion should be least. Revegetate denude areas with locally indigenous flora a.s.a.p. Implement erosion protection measures on site. Measures could include bunding around soil stockpiles, and vegetation of areas not to be developed. Implement effective and environmentally-friendly dust control measures, such as mulching or periodic wetting.
	<i>Sensory disturbance of fauna</i>	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Highly probable (50-90% chance)	Moderate	Moderate	Low	<ul style="list-style-type: none"> Commence (and preferably complete) construction during winter, when the risk of disturbing active (including breeding and migratory) animals, should be least. Minimize noise to limit its impact on calling and other sensitive fauna (e.g. frogs and Secretary bird). Limit construction activities to day time hours Minimize or eliminate security and construction lighting, to reduce the disturbance of nocturnal fauna.
	Destruction of palaeontological material	Negative	Site specific	Permanent	Moderate	Probable	Low	Low	High	Low	Very Low	<ul style="list-style-type: none"> If any archaeological material, palaeontological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an appropriate specialist. Such heritage is the property of the state and may require excavation and curation in an approved institution.
	Destruction of archaeological artefacts	Negative	Site specific	Permanent	Moderate-low	Definite	Very low	Low	High	Low	Very Low	<ul style="list-style-type: none"> If any archaeological material, palaeontological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an appropriate specialist. Such heritage is the property of the state and may require excavation and curation in an approved institution.
	Emissions from dust generation and construction vehicles	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> Ensure that cleared (excavated) areas and unpaved surfaces are sprayed with water (obtained from an approved source) to minimise dust generation. Approved soil stabilisers may be utilised to limit dust generation. Ensure that construction vehicles travelling on unpaved roads do not exceed a speed limit of 40 km/hour. Limit vehicles, people and materials to the construction site. Adequate dust control strategies should be applied to minimise dust deposition, for example: Periodic spraying of water on the entrance road when necessary.
	Potential spillage of by spillage or discharge of construction waste water	Negative	Site specific	Long term	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	High	Moderate	Low	<ul style="list-style-type: none"> Ensure that adequate containment structures are provided for the storage of construction materials on site. Ensure the adequate removal and disposal of construction waste and material.
	Potential Pollution of the surrounding water and ground as a result of generation of building rubble and waste scrap material	Negative	Site specific	Short term	Low	High reversibility	Low irreplaceability	Very low probability	High	High	Moderate	<ul style="list-style-type: none"> Ensure that adequate containment structures are provided for the storage of construction materials on site. Ensure adequate removal and disposal of construction waste and material.
	Opportunities for employment and skills development	Positive	Site specific	Long term	Low	Moderate	N/A	Very likely	High	High	Moderate	<ul style="list-style-type: none"> Enhance the use of local labour and local skills as far as reasonably possible. Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained. Ensure that an equitable percentage allocation is provided for local labour employment as well as specify the use of small-to-Moderate enterprises and training specifications in the Contractors contract. Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.
	Potential visual impacts as the	Negative	Site	Short term	Low	High	N/A	Very low	High	Moderate	Low	<ul style="list-style-type: none"> No specific mitigation measures are required other than standard

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Activity	Impact summary	Status	Extent	Duration	Intensity	Reversibility	Irreplaceability	Probability	Confidence	Significance without mitigation	Significance after mitigation	Proposed mitigation
	result of construction activities		specific			reversibility		probability				<ul style="list-style-type: none"> construction site housekeeping and dust suppression. These are included below: <ul style="list-style-type: none"> The contractor(s) should maintain good housekeeping on site to avoid litter and minimise waste. Litter and rubble should be timeously removed from the construction site and disposed at a licenced waste disposal facility. The project developer should demarcate construction boundaries and minimise areas of surface disturbance. Appropriate plans should be in place to minimise fire hazards and dust generation. Night lighting of the construction site should be minimised within requirements of safety and efficiency.
	Potential noise impact as the result of the use of construction equipment	Negative	Local	Long term	Low	High reversibility	Low irreplaceability	Very low probability	High	High	Moderate	<ul style="list-style-type: none"> Limit construction activities to day time hours
	Potential impact on the safety of construction workers and Health injuries to construction personnel as a result of construction work	Negative	Site specific	Short term	Low	High reversibility	Low irreplaceability	Very low probability	High	High	Moderate	<ul style="list-style-type: none"> Ensure that a skilled and competent Contractor is appointed during the construction phase. The Contractor must be evaluated during the tender/appointment process in terms of safety standards. The Contractor must ensure that all construction personnel are provided with adequate PPE for use where appropriate. The Contractor must undertake a Construction Phase Risk Assessment. A Construction Site Manager or Safety Supervisor should be appointed, in conjunction with the project manager, to monitor all safety aspects during the construction phase. This could be the same person that is assigned to co-ordinate the construction traffic.
	Traffic, congestion and potential for collisions	Negative	Site specific	Short term	Low	High reversibility	Low irreplaceability	Very low probability	High	Moderate	Low	<ul style="list-style-type: none"> Ensure that roads are not closed during construction, which may restrict access for emergency services. The Contractor must ensure that all construction personnel are provided with adequate PPE for use where appropriate
INDIRECT IMPACTS:												
<ul style="list-style-type: none"> Loss of biodiversity Some additional disturbance will inevitably occur in the direct surroundings of the site Increased dust levels during construction might negatively affect the plant growth. 												
CUMULATIVE IMPACTS:												
<ul style="list-style-type: none"> Additional infrastructure development, for example, water pipelines, power lines and access roads and the spread of alien invaders due to loss of natural vegetation will exacerbate the negative impact of the development on the vegetation and will lead to a loss of habitat for indigenous fauna and flora. Combined spatial footprint impacts in rare habitat in fragmentation of ESAs. Nutrient overload of groundwater. 												
OPERATIONAL PHASE												
Direct Impacts	Loss or degradation of wetland	Negative	Local	Temporary (>15 years)	Moderate	Moderate reversibility	Moderate irreplaceability	Probable (< 90% chance)	High	Moderate	High	<ul style="list-style-type: none"> No Wetlands were identified on site
	Environmental contamination due to waste water discharge on site	Negative	Local	Long term (>15 years)	Moderate	Moderate reversibility	Moderate irreplaceability	Probable (< 90% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> Ensure that the facility is designed in accordance with international best practice norms, and with advice from an appropriate specialist, to ensure that there is no environmental contamination from effluent, fodder, carcasses and other waste, and to ensure that there is also effective storm water management. Adhere to best practice waste disposal norms Establish appropriate emergency procedures for accidental contamination of the surroundings. Waste recycling should be incorporated into the facility's operations as far as

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Activity	Impact summary	Status	Extent	Duration	Intensity	Reversibility	Irreplaceability	Probability	Confidence	Significance without mitigation	Significance after mitigation	Proposed mitigation
												<ul style="list-style-type: none"> possible. Designate a secured, access restricted, signposted room for the storage of potentially hazardous substances such as herbicides, pesticides dips and medications. All hazardous waste should be disposed of at an appropriate licensed facility for this. Rehabilitate contaminated areas a.s.a.p. in accordance with advice from appropriate contamination and environmental specialists Educate workers regarding the handling of hazardous substances and about waste management and emergency procedures with regular training and notices and talks.
	Poor / Inappropriate control of animal pests	Negative	Site specific	Long term (>15 years)	Moderate	Moderate reversibility	Moderate irreplaceability	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> Ensure that there is effective storm water drainage around the facility Ensure that the facility is sufficiently ventilated to keep floors, bedding, and fodder as dry as possible. Prevent and manage unwanted animal access to fodder. Check that fan louvers (if installed) work properly, and close fans completely when off. Ensure that floors are sloped and slatted to facilitate drainage. Screed concrete floors properly to seal all cracks and limit the pooling of effluent and water. Effectively maintain and seal all pipes and reservoirs containing slurry, to prevent animals from accessing the effluent. Clean floors regularly. Clean up excess fodder regularly from under troughs and feed bins. Keep areas surrounding the facility free of spilled manure and litter. Remove all trash, and sources of feed and water for pests from the outside perimeter of the facilities. Keep weeds and grass mowed to 5cm or less immediately around the facilities, to reduce the prevalence of insects. Electrocution devices are available to kill flies, while other mechanical devices include traps, sticky tapes or baited traps. Control rodents through effective sanitation, rodent proofing and (as humane as possible) extermination. Rodenticides are not advised. Ensure that measures to control pests are tightly restricted to areas where these are problematic. Pest control measures should be taxon-specific. If necessary, advice should be sought from an appropriate specialist.
	Groundwater dewatering as a result of use of groundwater	Negative	Local	Temporary (Life of Facility)	Low	Moderate	Low irreplaceability	Likely	High	Moderate	Low	<ul style="list-style-type: none"> During the operational phase, the production of fish at the site would result in product wastewater from the aquaculture tanks, as well as runoff water from the cleaning and processing activities. Discharge water from the processing operations should be disposed of in a safe manner, should the water become contaminated over time it should either be stored in dedicated PCD's for reuse at the processing plant or treated prior to discharging into the environment.
	Stress Level Determination of a Groundwater Resource Unit	Negative	Local	Temporary (Life of Facility)	Low	Moderate reversibility	Low irreplaceability	Probable	High	Moderate	Low	<ul style="list-style-type: none"> Another borehole should be implemented in the expansion of the project waste and material.
	Potential Pollution of the surrounding water and ground water as a result of generation of building rubble and waste scrap material	Negative	Local	Temporary (Life of Facility)	Low	Moderate reversibility	Low irreplaceability	Probable	High	Moderate	Low	<ul style="list-style-type: none"> Ensure that adequate containment structures are provided for the storage of construction materials on site. Ensure the adequate removal and disposal of construction
	Avoid impacts on biosecurity and transmission of diseases.	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> Maintain appropriate pest control measures Effectively maintain and seal all pipes and reservoirs containing slurry, to prevent animals from accessing the effluent.
	Altered burning of vegetation on	Negative	Site	Short term	Low	High	Low	Probable	Moderate	High	Moderate	<ul style="list-style-type: none"> Create safe storage on the premises for flammable materials. If artificial

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	site		specific	(2-5 years)		reversibility	irreplaceability	(25-50% chance)				<ul style="list-style-type: none"> burning is considered necessary, establish and implement a fire management plan with emergency fire procedures. Maintain an effective fire break between the facility and the surrounding natural environment. Educate workers about the fire plan and emergency procedures with regular training and notices.
	Introduction and proliferation of alien species as a result of clearing of land.	Negative	Site specific	Temporary (<2 years)	Low	Moderate reversibility	Moderate irreversibility	Probable (25-50% chance)	High	High	Moderate	<ul style="list-style-type: none"> Carefully regulate / limit access by vehicles and materials to the site. Prohibit the introduction of domestic animals such as dogs and cats. Plant only locally indigenous flora if landscaping needs to be done. Employ best practices regarding tilling of soil and weed management Minimize the accumulation or dispersal of excess fodder on site. Remove Category species using mechanical methods, and minimize soil disturbance as far as possible. Alien debris could be donated to a local community
	Loss of CI or medicinal flora	Negative	Site specific	Temporary (<2 years)	Low	High reversibility	Low irreversibility	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> Educate the personnel prior to operation, and with yearly refresher talks.
	Sensory disturbance of fauna	Negative	Site specific	Long term (>15 years)	Low	High reversibility	Low irreversibility	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> Minimize essential lighting. Ensure that all outdoor lights are angled downwards and/or fitted with hoods. Avoid using metal halide, mercury or other bulbs that emit high UV (blue-white) light that is highly and usually fatally attractive to insects. Use bulbs that emit warm, long wavelength (yellow-red) light, or use UV filters or glass housings on lamps to filter out UV. Minimize unavoidable noise Conduct regular maintenance of machinery and ventilation systems / fans (if any).
	Emissions into the atmosphere as a result of staff vehicles.	Negative	Site specific	Temporary (<2 years)	Low	High reversibility	Low irreversibility	Probable (25-50% chance)	High	High	Moderate	<ul style="list-style-type: none"> Efficient movement of traffic through the entrance and exit in order to reduce congestion and vehicle emissions. Ensure that the facility is operated in such a manner whereby potential odours are minimised.
	Improved service delivery with regards Fish products	Negative	Site specific	Temporary (<2 years)	Low	High reversibility	Low irreversibility	Probable (25-50% chance)	High	High	Moderate	<ul style="list-style-type: none"> Ensure that the proposed infrastructure is maintained appropriately to ensure that all facilities and infrastructure operate within its design capacity to deliver as the market requires.
	Opportunities for employment and skills development	Positive	Local	Long term (>15 years)	High	High reversibility	Low irreversibility	Probable (> 90% chance)	High	High	Moderate	<ul style="list-style-type: none"> Enhance the use of local labour and local skills as far as reasonably possible. Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained. Ensure that an equitable percentage allocation is provided for local labour employment as well as specify the use of small-to-Moderate enterprises and training specifications in the Contractors contract. Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.
	Night lighting of the development on the nightscape of the surrounding landscape	Negative	Local	Short term (2-5 years)	Low	High reversibility	Low irreversibility	Probable (> 90% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> No specific mitigation measures are recommended as it is assumed that night lighting of the proposed storage facility will be planned in such a manner so as to minimize light pollution such as glare and light spill (light trespass) by: <ul style="list-style-type: none"> Using light fixtures that shield the light and focus illumination on the ground (or only where light is required). Avoiding elevated lights within safety/security requirements. Using minimum lamp wattage within safety/security requirements. Where possible, using timer switches or motion detectors to control lighting in areas that are not occupied continuously (if permissible and in line with minimum security requirements). Switching off lights when not in use in line with safety and security
	Potential noise impact from operations and road transport of products	Negative	Local	Short term (2-5 years)	Low	High reversibility	Low irreversibility	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> It is recommended that the drivers of the vehicles be discouraged from using air brakes at night. Limit the effects of noise associated disturbances from operational activities on sensitive fauna such as owls and Moderate-large mammals (especially carnivores), potentially occurring hedgehogs and large terrestrial birds such

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	Minor accidents to the public and moderate accidents to operational staff	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> as Korhaans and Secretary birds. An Emergency Plan should be compiled in order to deal with potential spillages and fires. Records of practices should be kept on site. Scheduled inspections should be implemented by operating personnel in order to assure and verify the integrity of hoses, piping and storage lagoon. Portable fire extinguishers and fire water hydrants (i.e. appropriate fire-fighting equipment) should be provided at the facility as required.
	Atmospheric pollution due to fumes, smoke from fires	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> Portable fire extinguishers and fire water hydrants (i.e. appropriate fire-fighting equipment) should be provided at the terminal as required. Mobile fire-fighting equipment should be provided at the berths as a safety precaution during the vessel offloading process. It should be noted that the products planned to be stored at the terminal have high flash points and low volatility. As a result, fires are unlikely, unsustainable, and can be extinguished with basic fire water and portable fire extinguishers.
DECOMMISSIONING PHASE												
Direct Impacts	<i>Loss or degradation of the wetland</i>	Negative	Local	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	High	High	Moderate	<ul style="list-style-type: none"> No wetlands were identified on site
	Introduction and proliferation of alien species	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	High	High	Moderate	<ul style="list-style-type: none"> Remove Category species using mechanical methods, and minimize soil disturbance as far as possible.
	Increased dust and erosion	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	High	High	Moderate	<ul style="list-style-type: none"> Limit vehicles to the construction site Commence (and preferably complete) decommissioning during winter, when the risk of erosion should be least. Revegetate denude areas with locally indigenous flora a.s.a.p. Implement erosion protection measures on site to reduce erosion and sedimentation of the local drainage system. Measures could include bunding around soil stockpiles, and vegetation of areas not to be developed. Implement effective and environmentally-friendly dust control measures, such as mulching or periodic wetting of the entrance road.
	<i>Sensory disturbance of fauna</i>	Negative	Site specific	Temporary (<2 years)	Low	High reversibility	Low irreplaceability	Low probability (10-25% chance)	Moderate	Moderate	Low	<ul style="list-style-type: none"> Commence (and preferably complete) demolition / rehabilitation during winter, when the risk of disturbing active (including breeding and migratory) animals, should be least. Minimize noise to limit its impact on sensitive fauna. Limit demolition activities to day time hours Minimize or eliminate security and other lighting, to reduce the disturbance of nocturnal fauna.
	Destruction of palaeontological material	Negative	Site-Specific	Permanent	Moderate-low	Low	High	Probable (25-50% chance)	High	Moderate	Very Low	<ul style="list-style-type: none"> If any archaeological material, palaeontological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an appropriate specialist. Such heritage is the property of the state and may require excavation and curation in an approved institution.
	Destruction of archaeological artefacts	Negative	Site-Specific	Permanent	Moderate-low	Low	High	Probable (25-50% chance)	High	Moderate	Very Low	<ul style="list-style-type: none"> If any archaeological material, palaeontological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an appropriate specialist. Such heritage is the property of the state and may require excavation and curation in an approved institution.
	Discharge of contaminated stormwater into the surrounding environment	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> The appointed Contractor should compile a Method Statement for Stormwater Management during the decommissioning phase. Provide secure storage for oil, chemicals and other waste materials to prevent contamination of stormwater runoff.
	Emissions from decommissioning vehicles and generation of dust	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	Moderate	High	Moderate	<ul style="list-style-type: none"> Ensure that cleared (excavated) areas and unpaved surfaces are sprayed with water (obtained from an approved source) to minimise dust generation. Approved soil stabilisers may be utilised to limit dust generation. Ensure that decommissioning vehicles travelling on unpaved roads do not

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	Noise generation from demolition activities	Negative	Local	Long term	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	High	High	Moderate	<ul style="list-style-type: none"> exceed a speed limit of 40 km/hour. A method statement, including detailed procedures, must be drawn up prior to any decommissioning of existing tanks. Decommissioning personnel must wear proper hearing protection, which should be specified as part of the Decommissioning Phase Risk Assessment carried out by the Contractor. The Contractor must ensure that all decommissioning personnel are provided with adequate PPE, where appropriate.
	Pollution of the surrounding environment as a result of the handling, temporary storage and disposal of solid waste	Negative	Site specific	Short term (2-5 years)	Low	High reversibility	Low irreplaceability	Probable (25-50% chance)	High	High	Moderate	<ul style="list-style-type: none"> General waste (i.e. building rubble, demolition waste, discarded concrete, bricks, tiles, wood, glass, plastic, metal, excavated material, packaging material, paper and domestic waste etc.) and hazardous waste (i.e. empty tins, paint and paint cleaning liquids, oils, fuel spillages and chemicals etc.) generated during the decommissioning phase should be stored temporarily on site in suitable (and correctly labelled) waste collection bins and skips (or similar). Waste collection bins and skips should be covered with suitable material, where appropriate. Should the on-site storage of general waste and hazardous waste exceed 100 m3 and 80 m3 respectively, then the National Norms and Standards for the Storage of Waste (published on 29 November 2013 under GN 926) must be adhered to: Ensure that general waste and hazardous waste generated are removed from the site on a regular basis and disposed of at an appropriate, licensed waste disposal facility by an approved waste management Contractor. Waste disposal slips or waybills should be kept on file for auditing purposes as proof of disposal. Ensure that sufficient general waste disposal bins are provided for all personnel throughout the site. These bins must be emptied on a regular basis. Appropriately time demolition / rehabilitation activities to minimise sensory disturbance to fauna.
<p>DIRECT IMPACTS:</p> <ul style="list-style-type: none"> None of the impacts mentioned above will occur. If the proposed project does not proceed, increased income and economic spin-off activities will not be realised. Approximately new permanent jobs will not be created during the operational phase. If the proposed project does not proceed, the industries that rely on the supply of fish products could experience hindered economic growth potential. <p>INDIRECT IMPACTS:</p> <ul style="list-style-type: none"> There are no indirect impacts during the construction phase for the No-go Option. <p>CUMULATIVE IMPACTS:</p> <ul style="list-style-type: none"> There are no cumulative impacts during the construction phase for the No-go Option 												

List any **specialist reports** that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

CSIR: Biodiversity survey
HCAC: Heritage Impact Assessment
ENVASS: Geohydrology Report

Describe any **gaps in knowledge or assumptions** made in the assessment of the environment and the impacts associated with the proposed development.

Uncertainties form part of any proposed development with regards to the actual degree of impact that the development will have on the immediate environment. Any actual and/or site specific results will only be determined once development has commenced and throughout the life cycle of the proposed project.

It is important to note that the absence of species on site does not conclude that the species is not present at the site. Reasons for not finding certain species during the early summer site visit may be due to:

- The short duration of fieldwork. The 2016/2017 season also experienced below average rainfall in the beginning of the season.
- Some plant species, which are small, have short flowering times, rare or otherwise difficult to detect may not have been detected even though they were potentially present on site.

Vegetation mapping was based on the brief in-field survey as well as aerial imagery. Positioning of the vegetation units may not be exact due to potential georeferencing errors displayed in Google Earth, GPS accuracy in field as well as the age of the aerial image.

E.3 Impacts that may result from the Decommissioning and Closure Phase

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Note from the CSIR: Decommissioning and/or closure phase is not expected to occur for the proposed fish. Should there be plans to close down the fishery; a closure plan will be submitted to the competent authority for approval and it will comply to the relevant legislation at the time of closure.

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

Heritage Impact Assessment
Ge-hydrology Report
Agriculture Report
Ecology field survey

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

N/A

E.4 Cumulative Impacts

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

Vehicles transporting material to and from the site will potentially increase traffic load along the internal gravel access road passing through the farms and potentially add to the noise and dust level to the nearby farms and residents. Potential exists for additional traffic during the construction phase, this is however of a temporal duration and impact. The transporting of fish plans to make use of one van and the proposed development will not result in significant increase of traffic along this road as the business plans to purchase one truck for the safe transportation of fish and vegetables.

The surrounding area does not have municipal water and therefore relies on extracting water from boreholes and surface water storage. Large amount of abstraction of water from different sources, coupled with water abstraction for this development, could result in decreased ground water availability of adjacent properties. This has applied for the water use licence with the Department of water and Sanitation. It will also make use of surface water stored in the tank for other domestic purposes.

The proposed development has the potential to impact the socio economic status of the local area through job creation, skills development and increased fish production for the local market. This impact will not be mitigated as mitigation will not improve the local socio-economic situation.

E.5 Environmental Impact Statement

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal 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.

PROPOSAL

The proposed development is mostly transformed as a result of past agricultural practices. The main environmental impacts associated with the proposed project include:

Site preparation and clearance

Site clearance cannot be avoided during the construction phase. This phase will result in exposed soil, which could result in soil erosion and wind-blown dust. Erosion can lead to destruction of natural habitats and sedimentation of nearby watercourses. All reasonable measures need to be implemented to minimise erosion during the construction phase. This impact will however be of temporary duration and have a low probability of occurrence with implemented mitigation measures and ultimately low impact.

Vegetation and habitat loss

Vegetation loss is unavoidable during the construction and operational phase. The majority of the site proposed for the development, however, has been transformed and very little natural vegetation remains. Development planning must ensure loss of vegetation and disturbance is restricted to within the recommended development footprint site layout. It is not expected that activities associated with the fish development will impact the natural faunal and flora to any significant level.

Waste

Waste will be generated during the construction and operational phase; this will therefore be of permanent duration. There will however be a system to effectively store/contain and remove waste following legal disposal measures. Waste impacts will be of low probability post mitigation and ultimately of low impact with effective mitigation measures and monitoring. Recycling of waste is also encouraged to reduce impacts as well as reducing the amount of waste incurred by disposal sites.

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Socio-economic

The proposed Development will contribute to the local economy during both the construction and operational phases as local labourers will be employed and the fish produce will also be supplied to local markets. Increased productivity as a result of the impact will lead to the creation of employment opportunities and skills development in the area. The impact will be of temporal nature during the construction phase and permanent for the operational phase. The probability of this impact occurring is high and as such a potential high positive impact.

Based on the environmental assessment presented, it is a conclusion of this Basic Assessment that the proposed project will have relatively low impacts on the environment. With the effective implementation of the management and mitigation measures recommended in this report and those of the specialist report, the significance of most impacts on site from an environmental perspective are considered to be of **low significance**. There will be potential impacts on vegetation and habitat, water quality, soil, dust, and odour as a result of earthworks associated with the activity, influx of vehicles, waste generated by the fishery and fish farming as a whole. As a result of the ecological sensitivities identified on site, it was recommended by the Ecological specialist that the proposed development be moved away from the identified sensitive biodiversity features.

Alternative 1

N/A

Alternative 2

N/A

No-go (compulsory)

The no-go option would mean that the status quo would remain. Fish production on the farm will not be increased, the current operations will not be altered and the type of technology will still be the same. The fishery will therefore not be able to develop increased profit and increase fish production to supply the fish industry. The opportunity to improve the local socio-economic situation and to use best practice fish farming methods, including improved fish welfare, will not be realised. Waste management, odour and pest control problems associated with the existing fishery will not be improved. Environmental impacts would not be impacted on any further than the current situation. The environmental impacts associated with the proposed development are considered to be of an acceptable level and can be effectively managed with the implementation of effective mitigation methods as discussed in the EMPr.

E.6 Impact Summary of the Proposal or Preferred Alternative

For proposal:

- Impact on soil (erosion and dust)
- Loss of vegetation and faunal habitat
- Impact on Conservation Important species
- Introduction and increase in alien vegetation
- Potential for pollution of water sources
- Waste generation
- Impact of pests and disease transmission
- Impact of traffic
- Employment opportunities created

For alternative:

N/A

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

Kedake Resources (Pty) Ltd is being assisted pro-bono under the DEA Special Needs and Skills Development Programme, which is a programme aimed to assist small-Moderate scale emerging farmers/businesses who do not have the financial means to pay for environmental services, as such do not have the financial opportunity to have more than one alternative site available, it is therefore recommended by the EAPs that the proposed site and layout be included in the Environmental Authorisation.

Social Impacts

The following potential social impacts have been identified:

- Socio-economic benefits as a result of development and growth in the area;
- Employment creation;
- Changes in crime patterns

Management and Mitigation Measures

Specific mitigation measures with regards to the site's social impacts include:

Planning of the development must include measures to maximise socio-economic benefits of the proposed road to the area. It will be beneficial if a broad spectrum of stakeholders is involved in the process.

The maximum number of employment opportunities must be created by making use of labour intensive methods as far as possible. Opportunities for unskilled/ low-skilled workers should be maximised.

Skills development must form part of employment creation. Skills development initiatives focus on the skills that will be required for the proposed road and commence as soon as possible. The GPDR should liaise with national departments such as Public Works and Environmental Affairs about using the Expanded Public Works Programme to create opportunities and provide services as part of the development.

Local labour must be employed as far as possible. A percentage of local labour must be included as a condition in all contracts. The local community must assist with defining the term "local" in terms of the skills available in the area. The percentage and definition must be determined with input from the business chamber and local communities.

The GPDRT through the project manager must create a labour desk and ensure information about the number and nature of jobs are advertised in the local communities. The process of applying for jobs must be communicated clearly and appropriately - via existing communication channels and others such as local radio stations.

The members of the neighbouring community and owners of property in the area must be kept informed on the development and must be granted the opportunity to comment on issues that may affect them.

Ward councillors representing residents must be actively involved in all decision-making.

The municipality must establish a culturally appropriate grievance mechanism where people can lodge issues and complaints relating to development on the site so that these issues can be dealt with timeously.

Measures must be taken to prevent crime during construction of the development, should it be approved. This includes:

Access control

- Fencing the site
- Increased patrolling of the site
- Construction workers to wear visible identification.

E.7 Spatial Development Tools

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

The spatial development tools were used to assess the suitability of the proposed development. The Sedibeng SDF promotes agricultural practices on the land that has been identified through land suitability criteria. The proposed development is within the area that has been demarcated as agricultural zone as such the proposed development aligns with the objectives of the IDP

Furthermore Gauteng has established agricultural hubs in order to boost agricultural economy and job creation. This led to the identification of the Midvaal agricultural Hub. These agricultural hubs are aimed at boosting agricultural products for local, national and international markets. The SDF further outlines the need for sustainable development of agricultural land which is driven by the following factors:

- Agricultural land is a limited natural resource
- Food security
- Climate change

It is therefore necessary to preserve land with high-potential agricultural solids based on the principles of sustainable development. This will ensure food security, even if such land is not currently used for agricultural purposes and also create awareness about the value of agricultural land and the need to preserve it.

E.8 Recommendation of the 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 as bound by professional ethical standards and the code of conduct of EAPASA).

YES

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If “NO”, indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

N/A

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:

This BAR addresses a detailed analysis of the potential impacts associated with the proposed development project. The proposed development will have an impact of low significance, provided that the mitigation measures proposed in this report and the EMPr are effectively implemented. It is therefore recommended that the proposed project is approved, subject to the following conditions and mitigation measures:

- The EMPr of this proposed development must form part of the contractual agreement and be adhered to by both the contractors and the applicant.
- The applicant to ascertain that there is representation of the applicant on site, at all times of the project phases, ensuring compliance with the conditions of the EMPr and Environmental Authorisation thereof.
- A Water Use Licence must be obtained for the water usage associated with the development

It is the opinion of the EAPs that the proposed development will comply with current relevant legislation, and that with the implementation of the mitigation measures suggested in this BAR, there are no environmental impacts identified as highly detrimental to the environment.

E.9 The Needs and Desirability of the Proposed Development (as per Notice 792 of 2012, or the updated version of this guideline)

Questions (Notice 792, NEMA, 2012)		Answer
PART I: NEED		
1.	Is the land use associated with the activity being applied for considered within the timeframe intended by the existing approved SDF agreed to be the relevant environmental authority?	Yes. The proposed land use is in line with the Sedibeng Spatial Development Framework 2014 – 2017 and Municipal Spatial Development Framework’s Strategic Objective 2 of Economic growth and development. As part of this objective, emphasis is also placed on Rural development programmes to improve livelihoods and stimulate employment.
2.	Should the development, or if applicable, expansion of the town/area concerned in terms of this land use occurs here at this point in time?	Yes. The proposed activity will result in optimal use of rural land. According to the Region 1: Regional Integrated Development Plan, 2014-15, the proposed project falls within an area which is demarcated as “rural”, and the intention of development in this area is to create vibrant, equitable and sustainable rural development which provides food and work opportunities.
3.	Does the community/area need the activity and the associated land use concerned? This refers to the strategic as well as local level.	Yes. The current operations of the business supply fish and vegetables to local stores and supermarkets, and with the proposed development, the company aims to supply major supermarkets and butcheries within the Emfuleni, Lesedi, Vereeniging, Ga-Rankuwa and the Tshwane Market. Local butcheries have been

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Questions (Notice 792, NEMA, 2012)		Answer
		approached as they have shown great interest in developing agriculture in South Africa. The business therefore aims to assist in addressing the unemployment difficulties in the area, restore dignity of farm workers in the long run, as well as demonstrate the significant role that the youth could contribute in agriculture. This opportunity is expected to be of economic benefit and contribution to the fish industry in the area.
4.	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?	Yes. The proposed development can be adequately serviced by the existing infrastructure and planned infrastructure which is not of municipal service. The proposed project will make use of borehole water, for which a water use licence is be applied for, and solar panels.
5.	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 the services and opportunity cost)?	No. The proposed development is not provided for in the infrastructure planning of the municipality as it is a small development of local importance. There is potential for a slight increase in terms of electricity, but this would be minimal as the operation is already using solar panels for lighting. It is a small operation and will therefore not impact greatly to municipal services should the area be provided with electricity. Therefore, the proposed project will not have major implications for the infrastructure planning.
6.	Is the project part of a national programme to address an issue of national concern or importance?	Although this project draws from no specific objectives of the National Development Plan of South Africa, the proposed fish production would however contribute to the country's collective objective of promoting sustainable food security. With this contribution to small and Moderate sized agricultural initiatives in the area, it is hoped to result in growing of the fish farming industry in the area, resulting in the growth of jobs and the growth of the area's economic base resulting in poverty alleviation. The proposed project will also have a positive contribution towards food safety and security in South Africa.
PART II: DESIRABILITY		
1.	Is the development the best practicable environmental option for this land/site?	Yes. The historical use of the site included crop farming, and according to the Gauteng Agricultural Potential Atlas (GAPA 4) the site does not have high crop agricultural potential. Due to its' small size, as well as previous and current land use practices, the site is ideal for small-scale fish farming and vegetable farming, and the environmental impacts associated with this use are minimal as the area is not high of high environmental sensitivity. The fish farm is located in a rural area with very low-density

DRAFT BASIC ASSESSMENT REPORT

Basic Assessment for the Kedake Resources (Pty) Ltd Fish Farming project,
Plot 19 Klipview Midvaal Local Municipality, Meyerton - Gauteng Province.

Questions (Notice 792, NEMA, 2012)		Answer
		dwelling, making it suitable for this type of environment.
2.	Would the approval of this application compromise the integrity of the existing approved and credible IDP and SDF as agreed to by the relevant authorities?	No. The proposed project intends to align its' objectives with that of the Regions SDF, which are directly linked to Sedibeng 2016 -20121 IDP and 2055 vision. It aims to aligned to the following objectives: Promote shared economic growth and job creation Improve financial sustainability Continue institutional development, transformation and innovation
3.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	No. The agricultural sector is one of the identified targeted for sectors in the Gauteng Growth and Development Strategy. The proposed development falls within areas demarcated for agriculture, as identified in the 2014 Gauteng Provincial EMF, and therefore the integrity of the existing environmental management priorities for the area will not be compromised by this development. It is also evident in view of the provincial SDF that there is also an emphasis on preserving a strong agricultural base.
4.	Do location factors favour this land use at this place? (this relates to the contextualization of the proposed land use on this site within its broader context).	Yes. The site falls within an area demarcated for agricultural development in the greater framework of the province. This is also attributed to agriculture having a strong social element in that it provides employment and housing to a significant proportion of the population, creating a unique social environment associated within rural areas.
5.	How will the activity of the land use associated with the activity being applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	The development of the proposed development associated infrastructure measuring around 10 ha in size will exert an impact on the environment; but based on the findings of the Ecological field Assessment by the CSIR the area falls in the alien floral species; <i>Populus alba</i> , <i>Tithonia diversifolia</i> , <i>Verbena bonariensis</i> , <i>Bidens pilosa</i> , and <i>Pennisetum clandestinum</i> . <i>Populus alba</i> , <i>Tithonia diversifolia</i> and <i>Verbena bonariensis</i> are classified as alien and invader species according to the Conservation of Agricultural Resources Act (CARA, 1983) and National Environmental Management Biodiversity Act (Act no 10 of 2004) (NEMBA), as per the CSIR recommendation and the locality of the site, the impacts associated with this proposed development can be mitigated and in implementing those measures effectively can have a significantly low impact.
6.	How will the development impact on people's health and well-being? (E.g. In terms of noise, odours, visual character and sense of place, etc.)?	This development has very few households, with the neighbours also engaged in farming activities therefore the visual character and sense of place aesthetics in the area is associated to agricultural activities and the proposed activity will not have a high significant impact in this regard.

DRAFT BASIC ASSESSMENT REPORT

Basic Assessment for the Kedake Resources (Pty) Ltd Fish Farming project,
Plot 19 Klipview Midvaal Local Municipality, Meyerton - Gauteng Province.

Questions (Notice 792, NEMA, 2012)		Answer
7.	Will the proposed activity or the land use associated with the activity being applied for, result in unacceptable opportunity costs?	No. The South Africa fish industry is growing; fish production increased by an annual average of 4.5%, second to broiler production which grew by 6%. Production turnaround for fish is quicker and demand fundamentals for this product are unlikely to change. This industry also presents opportunities in that there is a huge potential in the rural markets and exports to the SADEC region.
8.	Will the proposed land use result in unacceptable cumulative impacts?	No. The proposed project and associated activities has identified 3 cumulative impacts, with two of these having a low significant impact upon mitigation. The socio-economic impact will not be mitigated as mitigation will not result in job creation and improvement of the local socio-economic status. The measures outlined in the attached EMPr serve as mitigation methods to prevent the current and proposed project from having any serious long term cumulative impacts on the receiving environment.

E.10 The period for which the Environmental Authorisation is required (consider when the activity is expected to be concluded)

The Environmental Authorisation is required for a minimum of 20 years.

E.11 Environmental Management Programme (EMPr)

(must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers “Yes” to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached

YES

DRAFT Basic Assessment for the proposed Nile Tilapia
Aquaculture farm project, Plot 19 Klipview, Midvaal Local
Municipality, Meyerton - Gauteng Province.

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BASIC ASSESSMENT REPORT

SECTION F: APPENDICES



SECTION F: APPENDICES

The following appendices are attached to this BA Report:

APPENDICES

Appendix A	Site plan(s) - (must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)
Appendix B	Photographs
Appendix C	Facility illustration(s)
Appendix D	Route position information - N/A
Appendix E	Public participation information
Appendix F	Water use license(s) authorisation - Appendix F SAHRA information - Appendix F Service letters from municipalities - Appendix F Water supply information - Not applicable at this stage
Appendix G	Specialist Reports
Appendix H	Environmental Management Programme
Appendix I	CVs of the EAPs (project team who prepared the report)

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DRAFT Basic Assessment for the proposed Nile Tilapia
Aquaculture farm project, Plot 19 Klipview, Midvaal Local
Municipality, Meyerton - Gauteng Province.

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Appendix G	Specialist Reports
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Appendix I	CVs of the EAPs (project team who prepared the report)



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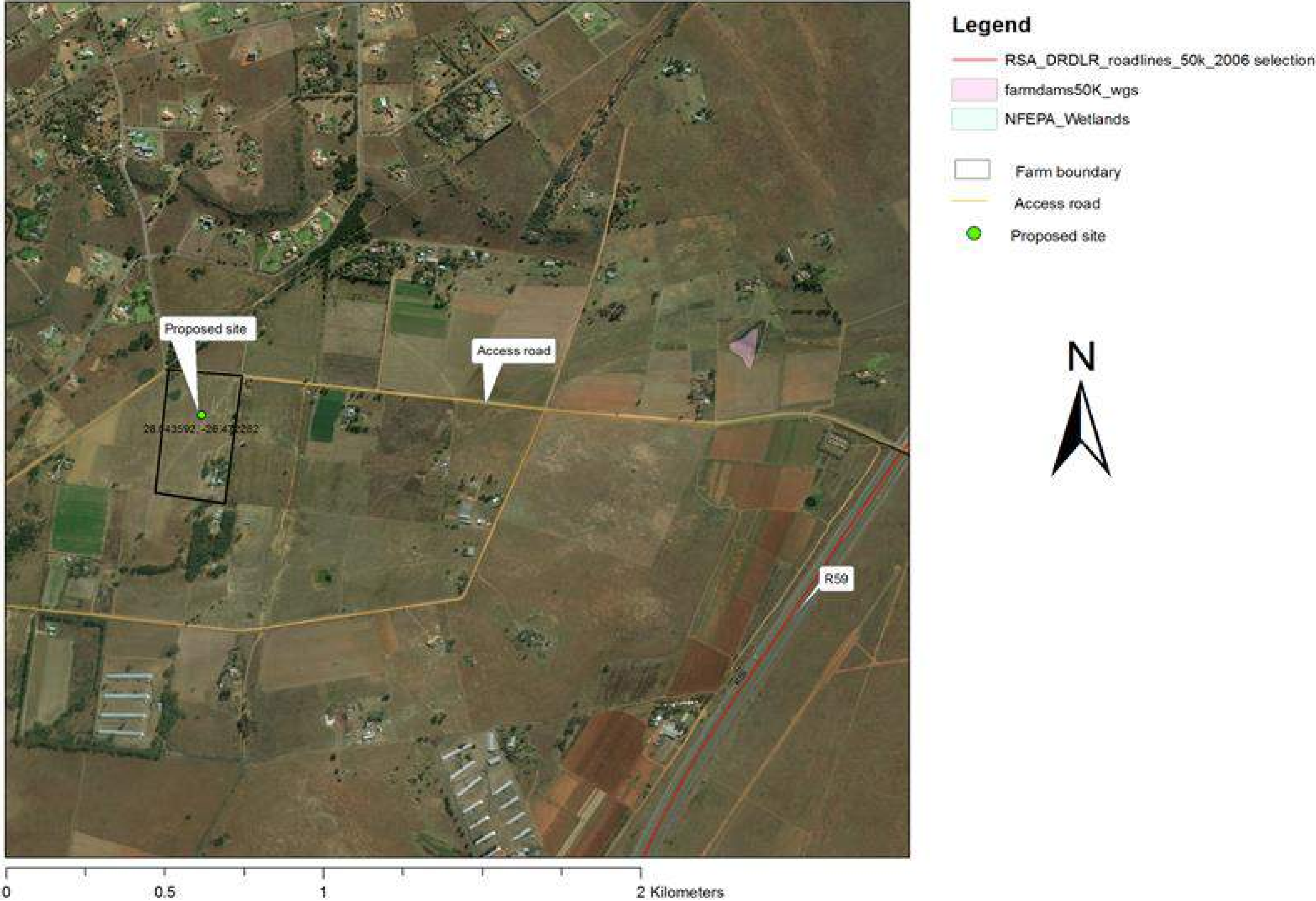
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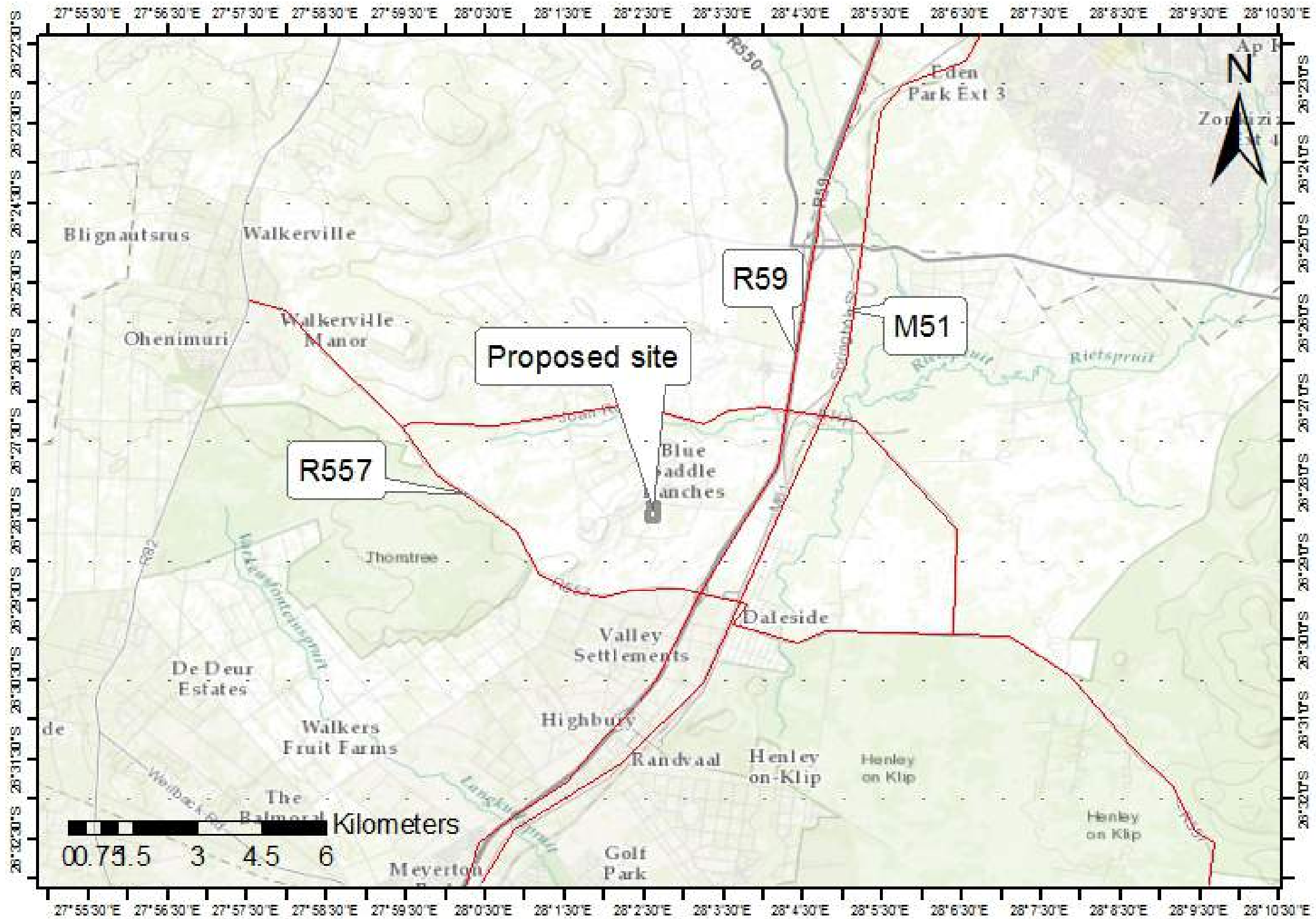
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Map 1A: Kedake Resources (Pty) Ltd Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton



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Map 1B: Kedake Resources (Pty) Ltd Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton



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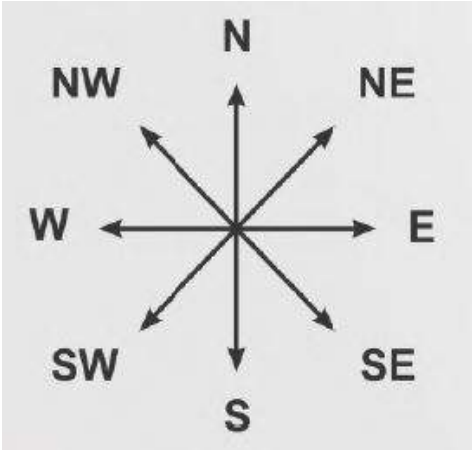
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Site Photographs taken in the eight major compass directions



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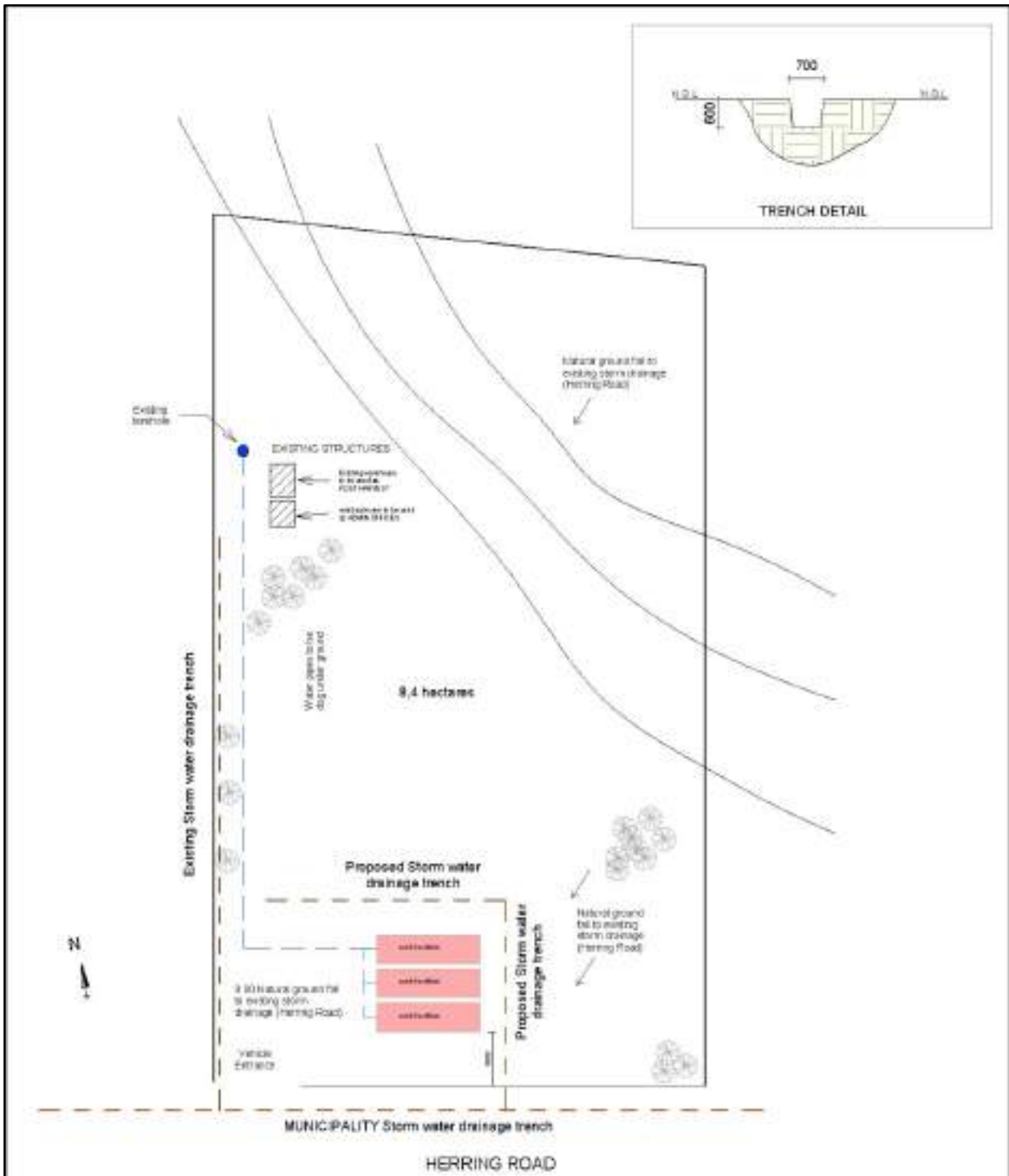
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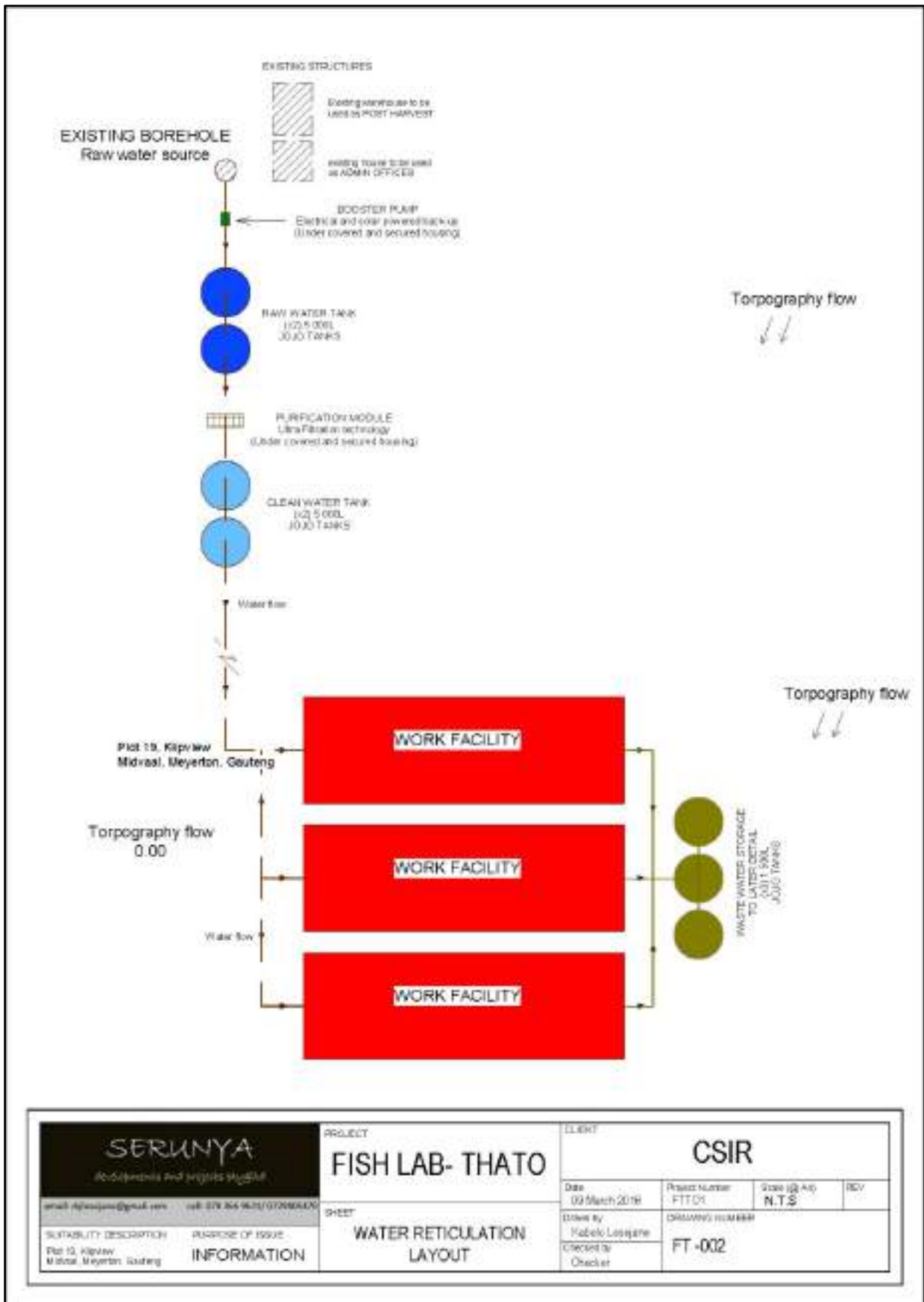
An illustration of the storm water plan



		PROJECT	CLIENT		
email: info@serunya@gmail.com call: 078 388 9032 / 02580478		FISH LAB- THATO	CSIR		
SUBSIDIARY DESCRIPTION	PURPOSE OF ISSUE	SHEET	Date 09 March 2016	Project Number FTT01	Scale (G.A.) 1:700
Plot 13, Hlalani Molweni, Maseru, Gaborone	INFORMATION	Storm Water Layout	Drawn by Khalid Lesajane	DRAWING NUMBER	
			Checked by Checker	FT -001	

SECTION F: APPENDICES

An illustration of the storm water plan



 Sustainability and Project Management email: info@serunya@gmail.com cell: 079 364 9670 / 0726854297	PROJECT FISH LAB- THATO	CLIENT CSIR		
	SHEET WATER RETICULATION LAYOUT	Date: 09 March 2016 Drawn by: Kabelo Losijane Checked by: Checker	Project Number: FTT01 Scale: (3 A4) N.T.S.	REV
SUITABILITY DESCRIPTION Plot 10, Kipivaw Midvaal, Meyerton, Gauteng	PURPOSE OF ISSUE INFORMATION			

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Appendix D:
Route position information - N/A

N/A

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Appendix E1: Proof of Site Notice

English and SeTswana Site notices placed at the entrance of the proposed expansion site

(Site Notice GPS location: 26° 28'18"S 28° 2'39"E"



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Contents of the English Site notice

Kedake Resources (Pty) Ltd Nile Tilapia Facility Project Site (Gauteng)

NOTICE OF A BASIC ASSESSMENT (BA) PROCESS

Notice is hereby given, in terms of the Environmental Impact Assessment (EIA) Regulations, under sub-regulation 41(1) and sub-regulation 41(4), published in Government Gazette No 38282 of 7 April 2017, of the National Environmental Management Act, 1998 (Act No 107 of 1998), that the **Kedake Resources (Pty) Ltd**, proposes the construction of a Nile Tilapia aquaculture facility on Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province.
(CSIR Reference Number: CSIR/CAS/EMS/IR/2017/15768/A)

The Council for Scientific and Industrial Research (CSIR), as the independent Environmental Assessment Practitioner, will manage the required Basic Assessment process for the proposed project. The project will be registered with the Gauteng Department of Agriculture and Rural Development (GDARD). The need for a Basic Assessment is triggered by the following activity listed in Government Notice Regulations (GNR) 327 and 324 of 7 April 2017:

Government Notice	Listed Activity Number
GNR 327, 7 April 2017	6 (i)
GNR 327, 7 April 2017	27
GNR 327, 7 April 2017	8
GN R 324, 7 April 2017	12 (a) ii

To obtain further information with regards to the project and Basic Assessment process, or to register as Interested and Affected Party (I&AP), please contact the Project Manager below, and quote the CSIR Reference Number:



Project Manager
Ms. Karabo Mashabela
PO Box 320, Stellenbosch, 7599
Tel: 021 888 2482
Fax: 021 888 2693
Email: kmashabela1@csir.co.za



Figure 1: Locality Map depicting the location of the Proposed Project

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Contents of the SeTswana Site notice

Kedake Resources (Pty) Ltd Projeke ya dihlahphi (Gauteng)

KITSISO YA TIRELO YA BASIC ASSESSMENT (BA)

Le itsisiwe gore, go ya ka melao ya Tlhatlhobo ya Tikologo (EIA), ka fa tlase ga molawana-tsamaiso 41(1) le molawana-tsamaiso 41(4), e e gatisitweng ka Gazeteng ya Mmuso ya nomoro 38282 wa 7 April... ya Molao wa Lekgotla la Taolo ya Tikologo, 1998 (Molao 107 wa 1998), gore **Kedake Resources (Pty) Ltd**, e batla go simolola kwebo ya go rua dikgogo kwa tshimong plotong 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province.

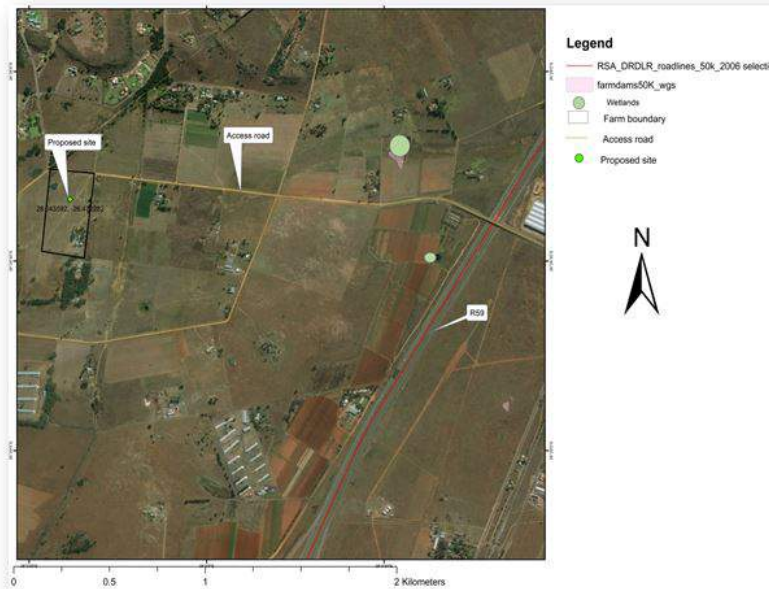
(CSIR Reference Number: CSIR/CAS/EMS/IR/2017/15768/A)

Lekgotla la Dipatlisiso tsa Saense le Indasteri (Council for Scientific & Industrial Research -CSIR), le le ikemetseng ka di tlhatlhobo tsa tikologo, le tlo laola tsamaiso ya tlhatlhobo ya tikologo ya projeke. Projeke e tla kwadisiwa le the Gauteng Department of Agriculture and Rural, Development (GDARD). Tlhatlhobo ya tikologo e tlhokagala gonne e tsositse ditiro tse di latelang tsa Kitsiso ya Melao wa Mmuso(GNR) 327 le 324 ya 7 April 2017:

Kitsiso ya Mmuso	Nomoro ya Tiro
GNR 327, 7 April 2017	6 (i)
GNR 327, 7 April 2017	27
GNR 327, 7 April 2017	8
GN. R 324, 7 April 2017	12 (a) ii

Go fitlhela dikitsiso tse di amanang le projeke le tsamaiso ya tlhatlhobo ya tikologo, ikwadise jaaka mokgatlhegi le moamegi wa projeke. Ikopantshe le:

Project Manager
Ms. Karabo Mashabela
PO Box 320, Stellenbosch, 7599
Tel: 021 888 2482
Fax: 021 888 2693
Email: kmashabela1@csir.co.za



Setshwantsho 1: Mmpepe o o bontshang lefelo la projeke

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
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Appendix E2: Written notices issued as required in terms of the regulations

Letter sent (6/09/17) to I&APs as part of Project Announcement



CSIR Environmental Management Services
PO Box 320
Stellenbosch
7599
South Africa
Tel: +27 21 888 2482
Fax: +27 21 888 2693
Email: kmashabela1@csir.co.za

6 September 2017

Dear Interested and Affected Party

NOTICE OF THE RELEASE OF THE BID FOR THE PROPOSED DEVELOPMENT OF NILE TILAPIA FISH FARM PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY MEYERTON-GAUTENG PROVINCE: (CSIR REFERENCE NUMBER: CSIR/CAS/EMS/IR/2017/15768/A).

The National Department of Environmental Affairs (DEA) and the Council for Scientific and Industrial Research (CSIR) have initiated the Special Needs and Skills Development Programme, whereby small-medium micro-enterprises and community trusts who are lacking financial means are provided with *pro-bono* environmental services. The project is being assessed in terms of the Government Notice Regulations (GNR) 324, 325 and 327 of 7 April 2017 of the National Environmental Management Act (Act 107 of 1998) published in Government Gazette 40772 on 7 April 2017.

The Kedake Resources Ltd (Pty) has been identified as an eligible client for this service and is proposing to develop a Nile tilapia fish farming project of 60 tons, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province. The need for a Basic Assessment process is required by the inclusion of the activities listed within GNR 327: Activity 6, 8 & 27. The CSIR, as the independent Environmental Assessment Practitioner (EAP), will be managing the Basic Assessment and public consultation processes for this proposed development.

Please find enclosed, a Background Information Document (BID) that will assist in your further understanding of the project as well as a Registration and Comment form. A 30 days commenting period has been allocated for the review and the provision of comments to the EAP, as well as for registering as an Interested and Affected Party that will be kept informed of the project for the remainder of the EIA process. Please submit your comments before or on **9 October 2017**.

Should you have any project related queries, please feel free to contact the undersigned

Yours sincerely,

Ms. Karabo Mashabela (Project Manager)

Contact: **Ms. Karabo Mashabela**
Postal address: PO Box 320, Stellenbosch, 7599, South Africa
Tel: 021 888 2482
Fax: 021 888 2473
E-mail: kmashabela1@csir.co.za
Website: <http://www.csir.co.za/ems/specialneeds/>

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Letter sent (06/09/17) to I&APs as part of Project Announcement

From: Karabo Mashabela

To:

BC bonginkosi.zulu@drdlr.gov.za; mashuduma@daff.gov.za; thokob@daff.gov.za;
MohapiN@dwa.gov.za; MuthraparsadN@dwa.gov.za; steven.mukhola@gauteng.gov.za;
karabo.mohatla@gauteng.gov.za; khalele.njoni@gauteng.gov.za; phuti.matlamela@gauteng.gov.za;
albert.marumo@gauteng.gov.za; MusekeneM@dwa.gov.za; RakgothoT@dwa.gov.za;
bethuel.netshiswinzhe@gauteng.gov.za; phindile.mbanjwa@gauteng.gov.za;
maphata.ramphele@gauteng.gov.za; Zingisa.Smale@gauteng.gov.za; celiam@tshwane.gov.za;
lelokop@tshwane.gov.za; shanellec@tswane.gov.za; minetteb@tswane.gov.za; rudzanim@tshwane.gov.za;
mamphekoamos@yahoo.com; mokwena@gmail.com; tsakgwe@gmail.com; tumi.lehabe@wessa.co.za;
adamp@ewt.org.za; ewt@ewt.org.za; Sfoya@geoscience.org.za; advocacy@birdlife.org.za;
howard.hendricks@sanparks.org; Victoria Bota (HO); Khathutshelo Ramavhoya (HO)

Date: 06/09/2017 09:34

Subject: Notification of Release of BID for Basic Assessment for the Fish Farming project, Plot 19 Klipview
Midvaal Notification of Release of BID for Basic Assessment for the Fish Farming project, Plot 19 Klipview
Midvaal
Province

Attachments: 2017 BID; Comments & Reg Form.docx; Letter to I&APs_BID.docx

Good morning,

You are hereby notified about the release of the Background Information Document (BID) regarding a Basic Assessment for the proposed Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province. Please find attached the BID, which has been released for 30 day review, and the Registration/Comment Form. Please return on or before 09 October 2017.

Should the contents of this project not pertain to you, kindly forward the documents to the person in your department that is affected. Additionally, please forward their contact details to the CSIR Project Manager or ask the affected party to contact the CSIR Project Manager. Should you wish to be registered or de-registered from receiving any further information during the Basic Assessment and Public Participation Process, kindly contact the CSIR Project Manager. Correspondence in this regard should preferably be written, i.e. Email, Fax or Letter.

Contact via: Ms Karabo Mashabela
Email: kmashabela1@csir.co.za

Tel: 021 888 2482
Fax: 021 888 2693

Postal: PO Box 320
Stellenbosch
7599
South Africa

Regards,
Karabo

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Proof email delivery sent on 11 April 2016

Mail From: Karabo Mashabela

File Edit View Actions Tools Window Help Retain

Close Reply Reply All Forward

Mail Properties Discussion Thread

Message Id: 59B14D74.5E3 : 171 : 6500

Subject: Notification of Release of BID for Basic Assessment for the Fish Farming project, Plot 19 Klipwew Midvaal Notification of Release of BID for Basic Assessment for the Fish Farming project, Plot 19 Klipwew Midvaal

Created By: KMashabela1@csir.co.za

Scheduled Date:

Creation Date: 07/09/2017 15:45

From: Karabo Mashabela





Recipients:

Recipient	Action	Date & Time	Comment
birdlife.org.za	Transferred	07/09/2017 15:45	
BC: advocacy@birdlife.org.za(advocacy@birdlife.org.za)			
daff.gov.za	Transferred	07/09/2017 15:45	
BC: mashuduma@daff.gov.za(mashuduma@daff.gov.za)			
BC: thokob@daff.gov.za(thokob@daff.gov.za)			
drdr.gov.za	Transferred	07/09/2017 15:45	
BC: bongnkosizulu@drdr.gov.za(bongnkosizulu@drdr.gov.za)			
dwa.gov.za	Transferred	07/09/2017 15:45	
BC: Mohaphi@dwa.gov.za(Mohaphi@dwa.gov.za)			
BC: MusckeneM@dwa.gov.za(MusckeneM@dwa.gov.za)			
BC: MuthraparsadN@dwa.gov.za(MuthraparsadN@dwa.gov.za)			
BC: Raigqho1@dwa.gov.za(Raigqho1@dwa.gov.za)			
ewl.org.za	Transferred	07/09/2017 15:45	
BC: adamp@ewl.org.za(adamp@ewl.org.za)			
BC: ewt@ewl.org.za(ewt@ewl.org.za)			
gauteng.gov.za	Transfer Delayed	07/09/2017 15:45	
BC: albert.marumo@gauteng.gov.za(albert.marumo@gauteng.gov.za)			
BC: betuel.netshisw inz he@gauteng.gov.za(betuel.netshisw inz he@gauteng.gov.za)			
BC: karabo.mohala@gauteng.gov.za(karabo.mohala@gauteng.gov.za)			
BC: khalele.njoni@gauteng.gov.za(khalele.njoni@gauteng.gov.za)			
BC: mphata.ramphelo@gauteng.gov.za			

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

BC: phindie.mbanjwa@gauteng.gov.za(phindie.mbanjwa@gauteng.gov.za)			
BC: phuti.matlamela@gauteng.gov.za(phuti.matlamela@gauteng.gov.za)			
BC: steven.mukhola@gauteng.gov.za(steven.mukhola@gauteng.gov.za)			
BC: Zingisa.Smole@gauteng.gov.za(Zingisa.Smole@gauteng.gov.za)			
)			
 geoscience.org.za	Transfer Delayed	07/09/2017 15:45	
BC: Sfoya@geoscience.org.za(Sfoya@geoscience.org.za)			
 gmail.com	Transferred	07/09/2017 15:45	
BC: moku.ena@gmail.com(moku.ena@gmail.com)			
BC: thato.ngake(thato.ngake@gmail.com)			
BC: tsakgw.e@gmail.com(tsakgw.e@gmail.com)			
 sanparks.org	Transfer Delayed	07/09/2017 15:45	
BC: howard.hendricks@sanparks.org(howard.hendricks@sanparks.org)			
 tshwane.gov.za	Transferred	07/09/2017 15:45	
BC: celam@tshwane.gov.za(celam@tshwane.gov.za)			
BC: leloko@tshwane.gov.za(leloko@tshwane.gov.za)			
BC: rudzanim@tshwane.gov.za(rudzanim@tshwane.gov.za)			
 tswane.gov.za	Transfer Delayed	07/09/2017 15:45	
BC: minetteb@tswane.gov.za(minetteb@tswane.gov.za)			
BC: shanelec@tswane.gov.za(shanelec@tswane.gov.za)			
 wessa.co.za	Transfer Failed	07/09/2017 15:45	
BC: lumi.lehabe@wessa.co.za(lumi.lehabe@wessa.co.za)			
	Undeliverable	07/09/2017 15:45	550 5.4.1 [lumi.lehabe@wessa.co.za]: Recipient address rejected: Access denied [HE1EUR01FT047.eop-EUR01.prod.protection.outlook.com]
 yahoo.com	Transfer Delayed	07/09/2017 15:46	
BC: mamphokoamos@yahoo.com(mamphokoamos@yahoo.com)			
Post Offices			
Post Office	Delivered	Route	
birdlife.org.za		birdlife.org.za	

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Postal List for mail sent 29/08/17: Project Announcement documents

Name & Signature of person responsible for post: F. Hartog 

23 Items – Normal Post (Kedake Resources (Pty) Ltd BA- 6 September 2017) Karabo Mashabela
021 888 2482

29/08/2017

EMS0136 / RUN / 02100 / 0215E

Municipal Manager: Albert De Klerk, PO Box 9, MEYERTON, 1960	Bassey Ramagaga PO Box 471 Vereeniging 1930	Agricultural Research Council: Aquaculture PO Box 8783, Pretoria, 0001
Department of Rural Development and Land Reform Bonginkosi Zulu Fedsure Building Private Bag X447 335 Pretorius Street Pretoria 0002	Department of Agriculture, Forestry and Fisheries Mashudu Marubini Private Bag X138 Pretoria 0001	Department of Agriculture, Forestry and Fisheries Thoko Buthelezi Private Bag X120, Pretoria 0001
Gauteng Department of Agriculture and Rural Development Steven Mukhala PO Box 8769, Johannesburg, 2000	Gauteng Department of Agriculture and Rural Development Phuti Matlamela PO Box 8769, Johannesburg, 2000	Gauteng Department of Agriculture and Rural Development Karabo Mohatla PO Box 8769, Johannesburg, 2000
Gauteng Department of Health Albert Marumo Private Bag X35, Johannesburg, 2000	Gauteng Department of Water and Sanitation Ms M Musekene Private Bag X313, Pretoria 0001	Gauteng Department of Water and Sanitation Ms T Rakgotho Private Bag X313, Pretoria 0001
Gauteng Department of Economic Development Private Bag X091 Marshalltown, 2107	WESSA Tumi Lehabe PO Box 435, Ferndale, 2160	The Endangered Wildlife Trust, Adams Pires Private Bag X11, Modderfontein, 1609, Johannesburg

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

The Endangered Wildlife Trust, Carla van Rooyen Private Bag X11, Modderfontein, 1609, Johannesburg	The Endangered Wildlife Trust, Dr H Davies-Mostert Private Bag X11, Modderfontein, 1609, Johannesburg	GDARD waste management Zingisa Smale PO Box 8769, Johannesburg, 2000
Birdlife Simon Gear PO Box 515 Randburg, 2194	South African National Parks (SANParks) Dr Howard Hendricks PO Box 787, Pretoria, 0001	ARC-Onderstepoort Veterinary Institute (ARC-OVI) Jackson Maeta Private Bag X 05, Onderspoort,0110
South African National Biodiversity Institute (SANBI) – Invasive plants Michael Cheek Durban 4000	Council for Geoscience Private Bag x112, Pretoria 0001	

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix E3: Proof of newspaper advertisements

Contents of the Newspaper advertisement in English published in the Midvaal Ster on 11/09/17

Notice of a Basic Assessment process being undertaken for the proposed Nile Tilapia Aquaculture farm project, Plot 19 Klipview, Midvaal Local Municipality Meyerton-Gauteng Province.

CSIR EMS Reference No: CSIR/CAS/EMS/IR/2017/15768/A)

Notice is hereby given of a Basic Assessment (BA) process being undertaken on behalf of Kedake Resources Ltd (Pty) the Project Applicant) for the proposed Aquaculture facility, comprising 10 ha on Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province. The proposed project will be located on a portion of land owned by Mr Imraan Nana. The Kedake Resources Ltd (Pty) is a start-up company proposing to establish a medium sized aquaculture facility that will produce 60 tons of Nile Tilapia per annum at a commercial scale.

In terms of the NEMA EIA Regulations published in Government Notice Regulation (GNR) 327, 324 on 7 April 2017 Government Gazette Number 40772, a BA process is required as the project triggers listed activities 6, 8 and 27 of GN.R327 .

The Council for Scientific and Industrial Research (CSIR) is managing the BA process on behalf of the applicant as part of the Special Needs and Skills Development Programme commissioned by the national Department of Environmental Affairs (DEA).

You are invited to register as an Interested and/or Affected Party (I&AP) and/or to provide any written comments on the BA process by **9 October 2017**. To obtain further information on the project and/or to register as an I&AP, please provide your full name, full postal address, phone numbers, email address and state your interest and/or concern to: **Ms. Karabo Mashabela, CSIR, PO Box 320, Stellenbosch 7599, Phone: (021) 888 2482, Fax: (021) 888 2693 or Email: kmashabela1@csir.co.za**

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Newspaper advertisement in English published in Midvaal STER on 11 September 2017

4
MIDVAAL STER
8 September - 11 September 2017



Are you looking for a job, a friend or a lover? SMS your request to 48534 and buy your Vaalweekblad every Wednesday at R5-40 to see your SMS. Vaalweekblad is a bilingual newspaper that keeps you updated about all interesting happenings in the Vaal and surroundings: political news, medical issues, sport and much more! Join our thousands of happy readers. Visit the Facebook page and website www.vaalweekblad.com.

For the latest breaking news, job opportunities and much more, visit www.sedibengster.com or www.vaalweekblad.com

Notice of a Basic Assessment process being undertaken for the proposed Nile Tilapia Aquaculture farm project, Plot 19 Klipview, Midvaal Local Municipality Meyerton-Gauteng Province.

CSIR/CS Reference No: CSIR/CNS/ENH/R2017/0768/A

Notice is hereby given of a Basic Assessment (BA) process being undertaken on behalf of Kedake Resources (Pty) Ltd (the Project Applicant) for the proposed Aquaculture facility, comprising 33 ha on Plot 19 Klipview Midvaal Local Municipality Meyerton/Gauteng Province. The proposed project will be located on a portion of land owned by the Project Applicant. The Kedake Resources (Pty) Ltd is a startup company proposing to establish a medium sized aquaculture facility that will produce 30 tons of Nile Tilapia per annum at a commercial scale.

In terms of the NEMA (EA) Regulations published in Government Notice Regulation (GNR) 227, 228 on 7 April 2017 (Government Gazette Number 42772), a BA process is required as the project triggers listed activities 6, 8 and 27 of GN4277.

The Council for Scientific and Industrial Research (CSIR) is managing the BA process on behalf of the applicant as part of the Special Needs and Skills Development Programme, commissioned by the national Department of Environmental Affairs (DEA).

You are invited to register as an interested and/or Affected Party (I&AP) and/or to provide any written comments on the BA process by 9 October 2017. To obtain further information on the project and/or to register as an I&AP, please provide your full name, full postal address, phone numbers, email address and state your interest and/or concern to: Ms. Karabo Makhobane, CSIR, PO Box 220, Stellenbosch 7599. Phone: (021) 888 2482, Fax: (021) 888 2493 or Email: kmakhob@csir.co.za



Contact @Paint at: Vanderbijlpark 016 931 3984; Vereeniging 016 422 3531 and Sasolburg 016 973 1222.



It's Spring! Give your house a fresh coat of paint

If you have a paint job in mind and you want unlimited colours to choose from combined with affordable prices and friendly professional service, @Paint is where you should be shopping. The @Paint Group has been serving the community for over 30 years and has three franchises servicing the Vaal Triangle.

@Paint is very proud to launch the new tinting bar concept in our stores. Customers can now enjoy an interactive paint experience in choosing their colour and watching their colour being tinted in front of their eyes using our specialised and unique tinting system.

Colour is no longer limited to a budget and all clients can enjoy a full range of colour at a price that suits their pocket. All colours in our colour bar are tinted for you at no additional tinting costs. And should you want your own individual colour that will suit your taste or space, our colour lab can develop the colour for you at no additional cost. It is all about giving the customer the power of choice in achieving individuality and personal taste.

Colour is an emotion that feeds the soul and @Paint lives by our slogan "If you can dream it we can mix it, and we look forward to sharing our interactive colour concept with our clients."



Pure Shopping Pleasure

Join us for a day of fun at the

Kids of the South

technic event

30 September 2017 at 11am

in the Platinum Court

With live appearances by: the popular band, the stylish Stacey Norman, roller ty judges and 10 amazing artists for you!





PUBLIC NOTICE

ROLL-OVER ADJUSTMENT BUDGET – 2017/2018 FINANCIAL YEAR AND DRAFT 2016/2017 ANNUAL REPORT

Notice is hereby given that Council at its 8th meeting held on 24th August 2017 adopted the roll-over adjustment budget as provided for in terms of section 28 of the Municipal Finance Management Act 56 of 2003 as well as section 25 of the Municipal Budget and Reporting regulations (projects from the 2016/2017 financial year to be rolled-over to the 2017/2018 financial year).

The said Roll-over Adjustment Budget can be viewed by the public at the Financial Services Department, Municipal Offices, Main Building, 26 Mitchell Street, Meyerton.

Notice is also hereby given in terms of Section 21A of the Local Government Municipal Systems Act, Act 20 of 2000, read with Section 12(7)(5) of the Municipal Finance Management Act, Act 56 of 2003, that Midvaal Local Municipality at its meeting held on 24 August 2017, approved the Draft Annual Report for 2016/17. It must be noted that Auditor General's report will only be available after 30 November 2017.

The said document will be available for inspection and submission of representations by no later than 16:00 on Friday 27 October 2017 at Room 204, Midvaal Municipal offices, 25 Mitchell str, Meyerton, as well as satellite office at De Dour, Randburg and Vaal Marina and all libraries and clinics. It is also available for inspection on Council's website (www.midvaal.gov.za).

Any representations must be forwarded in writing to the Municipal Manager on or before the date set out above.

Any person who cannot write will be assisted at the said office during office hours (7:30 - 13:00; 15:30 - 18:00) by having his/her comments or representations transcribed. Further information is also available at the said office.

Midvaal Municipal Offices
P O Box 8
MEYERTON
1980


MR. A.S.A. DE KLERK
 MUNICIPAL MANAGER



Kia Veroening 016 455 2255

2013 Kia Picanto 32000km R119 990.00
2014 Kia Picanto 1.8LX 42000km R100 990.00
2014 Ford Fiesta 1.4 42000km R154 990.00
2014 Hyundai i30 2.0 130000km R121 990.00
2012 Hyundai Getz 1.8L 8 A/T 25k R119 990.00
2012 KIA SORENTO 2.2 45000km R240 990.00
2014 Chevrolet 1.7LS 29000km R110 990.00
2014 Kia Sportage 2.0 49000km R232 990.00

IMPERIAL SELECT

Midvaal Municipal Offices
P O Box 8
MEYERTON
1980


MR. A.S.A. DE KLERK
 MUNICIPAL MANAGER

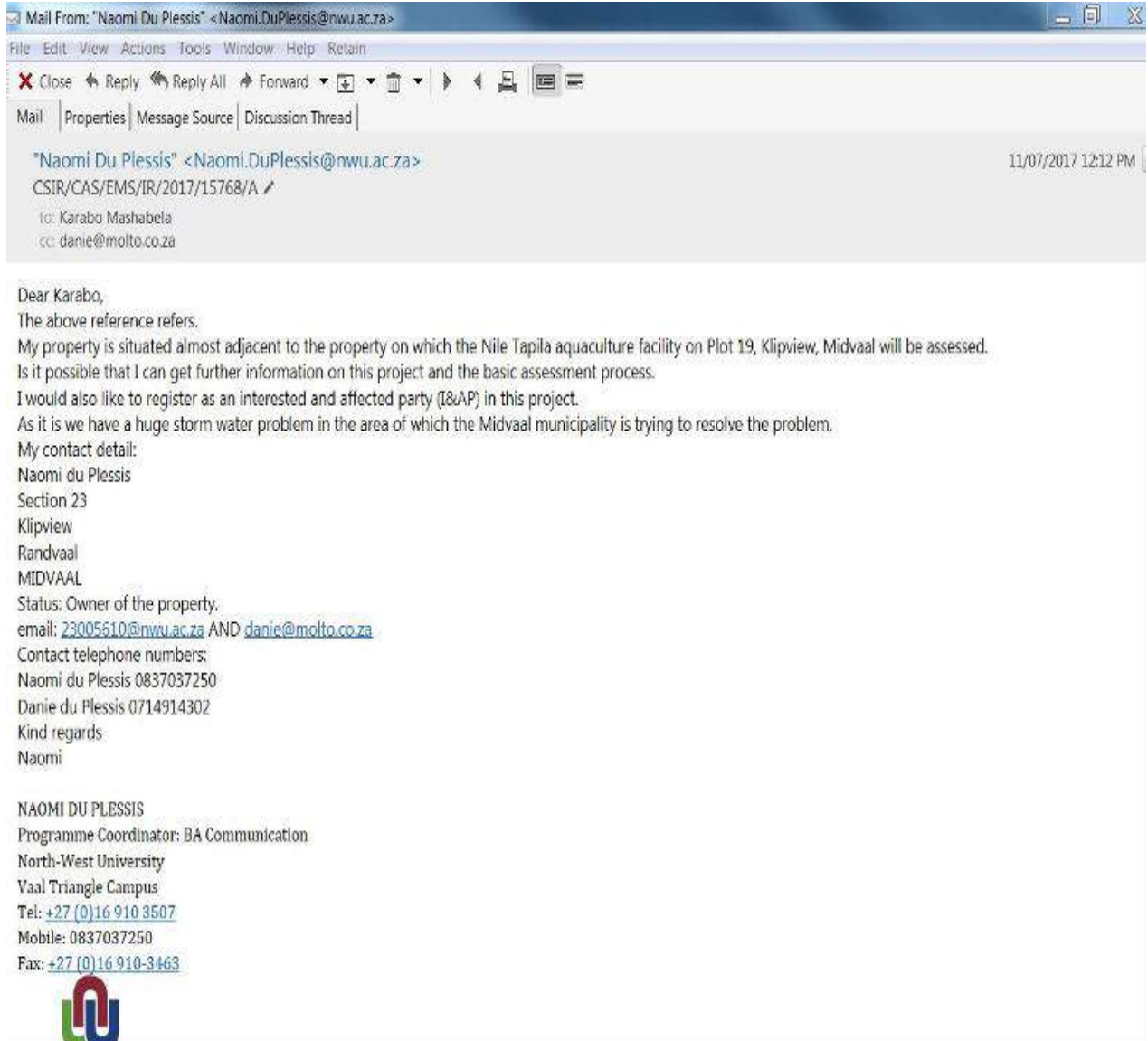
SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix E4: Communications to and from interested and affected parties

(In response to Project Announcement documents)



Mail From: "Naomi Du Plessis" <Naomi.DuPlessis@nwu.ac.za>

File Edit View Actions Tools Window Help Retain


Close Reply Reply All Forward

Mail Properties Message Source Discussion Thread

"Naomi Du Plessis" <Naomi.DuPlessis@nwu.ac.za> 11/07/2017 12:12 PM
CSIR/CAS/EMS/IR/2017/15768/A
to: Karabo Mashabela
cc: danie@molto.co.za

Dear Karabo,
The above reference refers.
My property is situated almost adjacent to the property on which the Nile Tapila aquaculture facility on Plot 19, Klipview, Midvaal will be assessed.
Is it possible that I can get further information on this project and the basic assessment process.
I would also like to register as an interested and affected party (I&AP) in this project.
As it is we have a huge storm water problem in the area of which the Midvaal municipality is trying to resolve the problem.
My contact detail:
Naomi du Plessis
Section 23
Klipview
Randvaal
MIDVAAL
Status: Owner of the property.
email: 23005510@nwu.ac.za AND danie@molto.co.za
Contact telephone numbers:
Naomi du Plessis 0837037250
Danie du Plessis 0714914302
Kind regards
Naomi

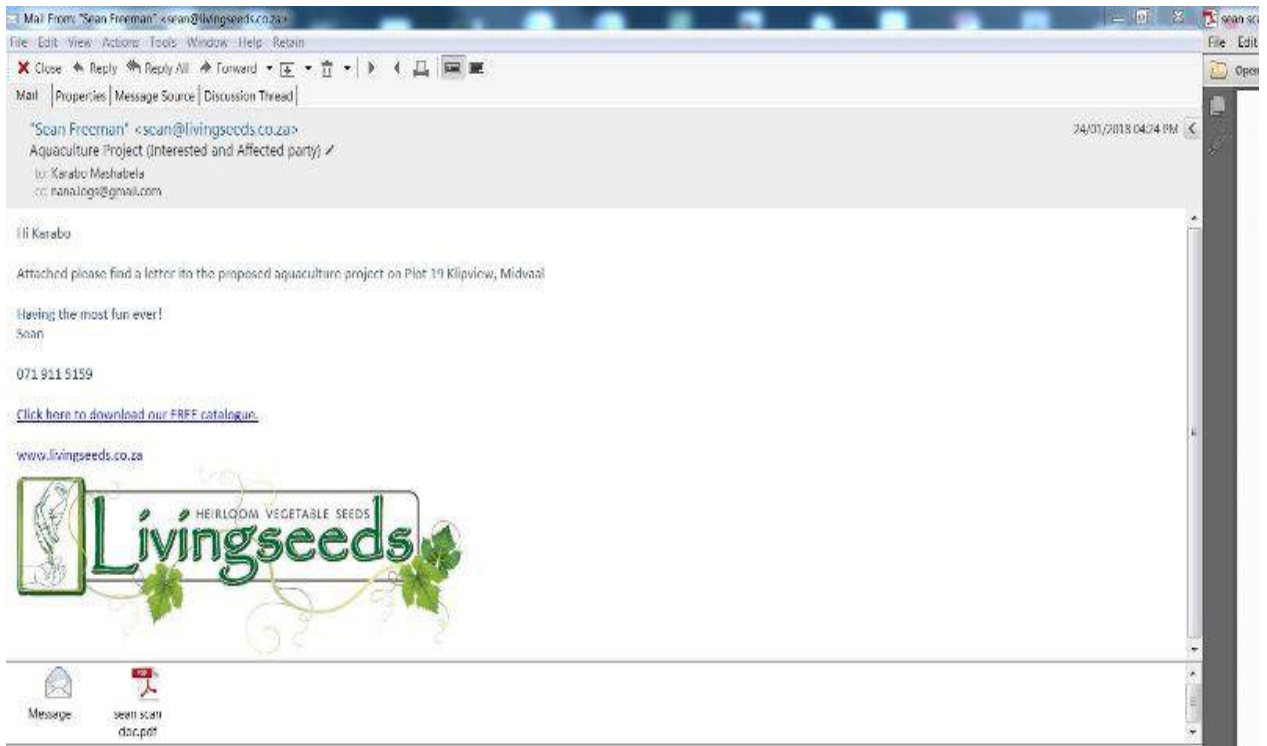
NAOMI DU PLESSIS
Programme Coordinator: BA Communication
North-West University
Vaal Triangle Campus
Tel: [+27 \(0\)16 910 3507](tel:+270169103507)
Mobile: 0837037250
Fax: [+27 \(0\)16 910-3463](tel:+270169103463)



SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.



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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.



24 February 2018

To Whom it may Concern

We would like to place of record our support and agreement for this aquaculture project.

Livingseeds Heirloom Seed (Pty) Ltd is the owner of 2 properties (one adjacent) and the directors of Livingseeds personally own a third property in Klipview.

We are interested and affected parties, in the sense that we grow vegetable seed for a living, and use groundwater to achieve this end. However we have no objection to both the described water-use, and the aquaculture farm.

We would like to take this opportunity to place on record that we believe this is a valuable and desirable enterprise to be undertaken in our community.

A handwritten signature in black ink, appearing to read 'Seed Freeman', is written over a horizontal line.

Seed Freeman

DIRECTOR

24 February 2018

Date

Livingseeds Heirloom Seeds (Pty) Ltd Reg: 2013/048761/07

www.livingseeds.co.za

P.O.Box 1421 Henley-on-Klip 1962 Tel: 071 911 3199

SECTION F: APPENDICES


DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Comments from SAHRA: Dated 20 September 2017

The Kedake Resources Ltd (Pty) Nile Tilapia Fish project

Our Ref: 11325



an agency of the
Department of Arts and Culture

T: +27 21 462 4152 | F: +27 21 462 4339 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4597 | Cape Town | 8001
www.sahra.org.za

Enquiries: Andrew Salomon
Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 11325

Date: Wednesday September 20, 2017
Page No: 1

Letter

In terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999)

Attention: Ms Thato Ngake

Aquaculture is the farming of fish, crustaceans, molluscs, aquatic plants, algae, and other aquatic organisms. Growing public demand for a healthy tasty and affordable food is stimulating the industry. The decline in wild fish populations as a result of overharvest and water pollution has promoted the culture of farm-fresh that are grown in contaminant-free waters in indoor tank systems. The Kedake Resources Ltd (Pty) is a start-up company envisioned to establish a medium size aquaculture facility that will produce 60 tons of Nile Tilapia at a commercial scale. Nile Tilapia will be grown over 180 days per six months cycle. The fish will be stocked in the fish rearing tanks and then the fish waste (faeces and uneaten food) flows into the settling tank, the process of biofiltration result in the conversion of toxic ammonia into plant friendly nitrates before the nitrate rich water is sold to Non-profit organisation to irrigate their plants. The proposed facility triggers the water use Act as the facility will use approximately 20m3 per annum in the leased 10ha (figure 1) of land from Mr Imraan Nana in Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province. The lease agreement includes the utilisation of a two boreholes on site. The first borehole is 55 metres 3000l/hr whereas the second borehole is 67 metres capacity 1400l/hr. This aquaculture farm water will be sourced from the existing boreholes on site were thirty fish tanks (250 litters) will be installed on site. Each Fish tank will be pumped with 200 litres of water per week. Four waste water tank five 5000 litter 2700 mm (Diameter and 12200 mm height) will be installed for the storage of waste water. The effluent produced on site will be used to irrigate vegetable gardens. The technology that will be employed on the farm is recirculating aquaculture systems (RAS).

Thank you for your notification regarding this development.

In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that prior to development it is incumbent on the developer to ensure that a Heritage Impact Assessment is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

The Kedake Resources Ltd (Pty) Nile Tilapia Fish project

Our Ref: 11325



An Agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4597 | Elsabe, Town | 8001
www.sahra.org.za

Enquiries: Andrew Salomon
Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 11325

Date: Wednesday September 20, 2017
Page No: 2

The quickest process to follow for the archaeological component is to contract an accredited specialist (see the web site of the Association of Southern African Professional Archaeologists www.asapa.org.za) to provide a Phase 1 Archaeological Impact Assessment Report. This must be done before any large development takes place.

The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites.

Where bedrock is to be affected, or where there are coastal sediments, or marine or river terraces and in potentially fossiliferous superficial deposits, a Palaeontological Desk Top study must be undertaken to assess whether or not the development will impact upon palaeontological resources - or at least a letter of exemption from a Palaeontologist is needed to indicate that this is unnecessary. If the area is deemed sensitive, a full Phase 1 Palaeontological Impact Assessment will be required and if necessary a Phase 2 rescue operation might be necessary. Please note that a nationwide fossil sensitivity map is now available on SAHRIS to assist applicants with determining the fossil sensitivity of a study area .

If the property is very small or disturbed and there is no significant site the heritage specialist may choose to send a letter to the heritage authority motivating for exemption from having to undertake further heritage assessments.

Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewsapes must also be assessed.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully


SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

The Kedake Resources Ltd (Pty) Nile Tilapia Fish project

Our Ref: 11325




an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4506 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4537 | Cape Town | 8001
www.sahra.org.za

Enquiries: Andrew Salomon
Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 11325

Date: Wednesday September 20, 2017
Page No: 3

Andrew Salomon
Heritage Officer: Archaeology
South African Heritage Resources Agency



Phillip Hine
Acting Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

ADMIN:
Direct URL to case: <http://www.sahra.org.za/node/405498>

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Comments from Midvaal municipality

Basic Assessment for the proposed Nile tilapia Fish Farming Project, Plot 19 Klipview Midvaal Local
Municipality Meyerton-Gauteng Province.

September 2017

COMMENT AND REGISTRATION FORM

Name: MJ Arlow	
ID no: 6604073060080	Telephone: 016 360 7583
Organisation: Midvaal Local Municipality	Fax: 016 360 7538
Position: Dir. Development and Planning	Email: thysa@midsaal.gov.za
Physical address: Development and Planning Bldg Midvaal Civic Centre Mitchell Street Meyerton	Postal address: P.O. Box 9 Meyerton 1960

Please indicate if you would like to register as an Interested and Affected Party (I&AP). Registration is required in order to receive further correspondence during the Basic Assessment Process. Please tick the appropriate box.

YES
 NO

Please indicate if you have any interest (business, financial, personal or other) in the application for Environmental Authorisation:

No / None

Please describe any issues or concerns you may have regarding the proposed project, which you think should be considered during the Basic Assessment Process.

Biggest concern is how resource intensive is this operation - going to be? Will water be extracted from boreholes? How much water? The proposed site is in an area that could be underlain by Dolomite. Water extraction might result in sink hole formation.

Please provide details of any other individuals or organisations that should be registered as I&APs:

Reg Humphris Conservation	083 235 1529
Roxy Du Toit	082 515 2884

Please complete this Comment and Registration Form and submit it to:

<p>Ms. Karabo Mashabela P O Box 320, Stellenbosch, 7599 Tel: 021 888 2482 Fax: 021 888 2473 E-mail: kmashabela1@csir.co.za</p>



Board members: Prof T. Majoni (Chairperson), Adv G. Bodola, Ms P. Bakari, Dr P. Goyts, Dr A. Liebel,
Dr R. Masango, Ms M. Maseko, Mr J. Ntshintzha, Ms A. Ntsh, Prof M. Prakeg, Dr S. Sibi (CEO)

www.csir.co.za

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Comments from Gauteng Department of Health - Sedibeng District

Basic Assessment for the proposed Nile tilapia Fish Farming project, Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province.

September 2017

COMMENT AND REGISTRATION FORM

Name: Sifiso Ngubeni	
ID no: 9201065192085	Telephone: 016 950 6119/6205
Organisation: Gauteng Department of Health - Sedibeng District	Fax: 016 950 6034
Position: Senior Environmental Health Practitioner	Email: Sifiso.Ngubeni@gauteng.gov.za
Physical address: Sedibeng District Health Services Johan Heyns Community Health Centre Cnr Frikkie Meyer & Pasteur BLVD Vanderbijlpark	Postal address: Private Bag X023 Vanderbijlpark 1900

Please indicate if you would like to register as an Interested and Affected Party (I&AP). Registration is required in order to receive further correspondence during the Basic Assessment Process. Please tick the appropriate box.

YES

NO

Please indicate if you have any interest (business, financial, personal or other) in the application for Environmental Authorisation:

Health Authority – As part of Environmental Health, our role is to ensure the public and all persons affected are protected from diseases, ill-health or injuries which may arise from those proposed developments or projects.

Please describe any issues or concerns you may have regarding the proposed project, which you think should be considered during the Basic Assessment Process.

Fauna and flora impacts when removing natural vegetation or ecological system on the proposed area.

Noise impacts which may arise from the construction and production of the business.

Air pollution impacts from the construction of the business structures.

Disposal and Waste management impacts from all the production of the business.

Nuisance impacts from all the processes of the business.

Impacts from diseases vectors such as Malaria or Bilharzia due to a large use or consumption of water during production and processing.

Please provide details of any other individuals or organisations that should be registered as I&APs:



Please complete this Comment and Registration Form and submit it to:

our future through science

Board members: Prof T. Majazi (Chairperson), Adv G. Badela, Ms P. Baleni, Dr P. Goyins, Dr A. Llobell, Dr R. Masango, Ms M. Maseko, Mr J. Netshitenzhe, Ms A. Noah, Prof M. Phakeng, Dr S. Sibisi (CEO)

www.csir.co.za

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Comments from Gauteng Conservation

Basic Assessment for the proposed Nile tilapia Fish Farming project, Plot 19 Klipview Midvaal Local
Municipality Meyerton-Gauteng Province.

September 2017

COMMENT AND REGISTRATION FORM

Name: Reg Humphrey	
ID no:	Telephone: 083 235 1529
Organisation: Gauteng Conservation	Fax:
Position: Southern Gauteng WTC Representative	Email: regh@solutions4u.co.za
Physical address: Meyerton Farms	Postal address: PO Box 1964 Mulbarton JHB 2059

Please indicate if you would like to register as an Interested and Affected Party (I&AP). Registration is required in order to receive further correspondence during the Basic Assessment Process. Please tick the appropriate box.	
YES	Ticked
NO	
Please indicate if you have any interest (business, financial, personal or other) in the application for Environmental Authorisation:	
None	

Please describe any issues or concerns you may have regarding the proposed project, which you think should be considered during the Basic Assessment Process.
Water Usage
Pollution and risks of smells
Hygiene re fish processing
Waste
Breeding stock source
Road, Noise and Visual Impact

Please provide details of any other individuals or organisations that should be registered as I&APs:

Please complete this Comment and Registration Form and submit it to:

Ms. Karabo Mashabela P O Box 320, Stellenbosch, 7599 Tel: 021 888 2482 Fax: 021 888 2473 E-mail: kmashabela1@csir.co.za



Board members: Prof T. Majozi (Chairperson), Adv G. Badiela, Ms P. Baleni, Dr P. Goyns, Dr A. Llobell,
Dr R. Masango, Ms M. Maseko, Mr J. Netshitenzhe, Ms A. Noah, Prof M. Phakeng, Dr S. Sibisi (CEO)

www.csir.co.za

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Proof of Land zoning by the Midvaal Local Municipality



Tel: 016 360 7585 • Fax: 016 360 7538 • E-mail: mothagabo@midvaal.gov.za

DEVELOPMENT PLANNING & HOUSING DEPARTMENT

Our Ref: Town Planning Enquiry no: 1440

11 August 2017

Cell phone no: 073 645 8562

Dear Thato Ngake

TOWN PLANNING ENQUIRY: PROPOSED AQUACULTURE AND CROP CULTIVATION FARMING IN RESPECT OF PORTION 19 OF THE FARM KLIPVIEW 175 IR

Your enquiry dated the 07 August 2017 refers.

Kindly note that Portion 19 of the farm Klipview 175-IR is zoned "Agriculture" in terms of the Randvaal Town Planning Scheme, 1994 and therefore the proposed "aquaculture and crop cultivation farming" is permitted as a primary right on the above mentioned property subject to the submission of building plans.

Furthermore note that the matter was discussed at our Planners's Permission Meeting held on 10th August 2017 which recommended that comments from Social Services Department (Environmental Section) should be obtained regarding the scale of farming activities and also verify with the Deed of Transfer on any form of restrictions that might restrict the proposed development. Below are contact details for Social Services:

Ben Viljoen: Telephone – 016 360 5857/ Email – benw@midvaal.gov.za.

It must be stated that the views/opinions and information herewith contained are provided without prejudice to whatever information may in future be provided to or attained by Council, and that Council would be at liberty to later amend or review its stance related hereto.

Should you require any additional information, please contact the writer during normal office hours.

Regards,


MOYAGABO RAPHASHA
TOWN PLANNER

(Portion 19 of the farm Klipview 175 IR)

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix E5: Minutes of any public and/or stakeholder meetings – Not Applicable

Appendix E6: Comments and Responses Report

*Please note that the comments are taken in verbatim from the comments provided by Interested and Affected Parties

Comments received following the project announcement on 11 September 2017 (prior to the release of the Background Information Document)

ISSUES RAISED	COMMENTATOR	DATE	RESPONSE
There is a huge storm water problem in the area of which the Midvaal municipality is trying to resolve the problem.	Naomi du Plessis Danie du Plessis	11 July 2017	Thank you for the comment the storm water management plan will be included in the specialist study for freshwater
Biggest concern is how resource intensive is this operation going to be? Will water be extracted from boreole? How much water? The proposed site is in an area that could be underline by Dolomite, Water extraction might be a problem	Mr. Thys Arlow Director: Development and Planning Midvaal Tel : 016 360 7583 Email: <i>ThysA@midvaal.gov.za</i>	27 September 2017	Thank you for your comment, the applicant has applied for a water use license with the Department of Water and Sanitation awaiting response.
Fauna and flora impacts when removing natural vegetation or ecological system on the proposed area. Noise impacts which may arise from the construction and production of the business. Noise impacts which may arise from the construction and production of the business. Noise impacts which may arise from the construction and production of the business. Nuisance impacts from all the processes of the business. Impacts form diseases vectors such as Malaria or Bilharzia due to a large use or consumption of water during production and processing.	<i>Sifiso Ngubeni: Gauteng Department of Health - Sedibeng District</i> <i>Email: Sifiso.Ngubeni@gauteng.gov.za</i> <i>Senior Environmental Health Practitioner</i> <i>Sedibeng District Health Services</i> <i>Johan Heyns Community Health Centre</i>	06 October 2017	Thank you for your comment, all the Impacts and mitigation measures will be addressed in the Draft BAR and EMPR.

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

ISSUES RAISED	COMMENTATOR	DATE	RESPONSE
	<i>Cnr Frikkie Meyer & Pasteur BLVD Vanderbijlpark</i>		
<p>Please describe any issues or concerns you may have regarding the proposed project, which you think should be considered during the Basic Assessment Process.</p> <ul style="list-style-type: none"> • Water Usage • Pollution and risks of smells • Hygiene re fish processing • Waste • Breeding stock source • Road, Noise and Visual Impact 	<p><i>Reg Humphrey Gauteng Conservation</i></p> <p><i>PO Box 1964 Mulbarton JHB 2059</i></p> <p><i>Email: regh@solutions4u.co.za</i></p>	13 October 2017	Thank you for your comment, all the Impacts and mitigation measures will be addressed in the Draft BAR and EMPR.
<p>We would like to place of record our support and agreement for this aquaculture project.</p> <p>Livingseeds Heirloom Seed (Pty) Ltd is the owner of 2 properties (one adjacent) and the directors of Livingseeds personally own a third property in Klipview.</p> <p>We are interested and affected parties, in the sense that we grow vegetable seed for a living, and use groundwater to achieve this end. However we have no objection to both the described water-use, and the aquaculture farm.</p> <p>We would like to take this opportunity to place on record that we believe this is a valuable and desirable enterprise to be undertaken in our community.</p>	<p><i>Heirloom Vegetables Seeds Living seeds</i></p>	24 February 2018	Thank you for the comments noted.

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix E7: Comments from I&APs on Basic Assessment (BA) Report - N/A at this stage of the BA process

ISSUES RAISED	COMMENTATOR	DATE	RESPONSE

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DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix E8: Copy of the register of I&APs

Company/organisation	Name	Physical Address	Phone	Postal	Cell	Email	BID + letter 1 + comment form
NATIONAL							
Department of Environmental Affairs-National	Mmatlala Rabothata						email+post
Department of Environmental Affairs-National	Sibusisiwe Hlela						email
Department of Environmental Affairs-National	Takalani Nemarude						email
Department of Rural Development and Land Reform	Bonginkosi Zulu						email+post
Department of Agriculture, Forestry and Fisheries	Mashudu Marubini						email+post
Department of Agriculture, Forestry and Fisheries	Hettie Buys					HettieB@daff.gov.za	email+post
Department of Agriculture, Forestry and Fisheries (AgriLand and Liaison Officer)	Ms Thoko Buthelezi						email+post
National Department of Water Affairs	Ms Ndileka K mohapi						email + post
National Department of Water Affairs	Namisha Muthraparsad						email + post
PROVINCIAL							
Department of Agriculture and Rural Development	Steven Mukhola						email+post
Department of Agriculture and Rural Development	Karabo Mohatla						email+post
Department of Agriculture and Rural Development	Khalele Njoni						post
Department of Agriculture and Rural Development	Phuti Matlamela						email+post

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Company/organisation	Name	Physical Address	Phone	Postal	Cell	Email	BID + letter 1 + comment form
Department of Health	Albert Marumo						email+post
Department of Water and Sanitation	Ms M Musekene						email+post
Department of Water and Sanitation	Ms T Rakgotho						email+post
Gauteng Department of Infrastructure Development	Bethuel Netshiswinzhe						email+post
Gauteng Department of Economic Development	Phindile Mbanjwa						email+post
The Provincial Heritage Resources Authority Gauteng	Maphata Ramphele						email+post
The Provincial Heritage Resources Authority Gauteng	Tebogo Molokomme						email+post
GDARD waste management	Zingisa Smale						email+post
LOCAL MUNICIPALITY							
Executive Mayor	Cllr. Bongani Baloyi						email+post
Strategic planning & economic development	Cllr. G Hlongwane						<i>gretah@sedibeng.gov.za;</i> <i>ellenm@sedibeng.gov.za</i>
Municipal Manager	Mr Albert De Klerk						post
LED Officer	Mr Henry Human						email+post
WARD COUNCILLORS							
CLIENT & NEIGHBOURS							
Client	Thato Ngake						email

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DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Company/organisation	Name	Physical Address	Phone	Postal	Cell	Email	BID + letter 1 + comment form
Neighbours	Naomi du Plessis Danie du Plessis		+27 (0)16 910 3507		0837 0372 50 0714 9143 02	<i>Naomi.DuPlessis@nwu.ac.za</i> <i>danie@molto.co.za</i>	
Neighbours	Sean Freeman	P O BOX 1421 Henley on Klip 1962	071 911 5159			sean@livingseeds.co.za	
OTHER I&APs							
WESSA	Tumi Lehabe						email
EWT	Adam Pires						email+post
EWT	Dr Harriet Davies- Mostert						email+post
Council for Geoscience	Dr Stewart Foya						email+post
Birdlife	Simon Gear						email
South African National Parks (SANParks)	Dr. Howard Hendricks						email+post
South African National Roads Agency	Victoria Bota						email
South African National Roads Agency	Khathutshelo Ramavhoya						email
AgriLand	Anneliza Collett						post
Grasslands Society of South Africa	Feyni Du Toit						post

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DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

BASIC ASSESSMENT REPORT

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

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DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix 1: Water Use Licence application: Dated 09 August 2017



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X995, Pretoria 0001/ Bothongo Plaza East Building, 285 Francis Baard Street, Pretoria
Tel: 012 3921300/ Fax: 012 392 1304

Enquiries: T.T. Mafunisa **Telephone:** (012) 392 1498

Email: MafunisaT@dws.gov.za

P.O.Box 234
Pimville
Soweto
Gauteng
1808

Attention: Thato Khotso Ngake

PROOF OF RECEIPT OF YOUR APPLICATION FORM TO APPLY FOR A WATER USE LICENCE IN TERMS OF SECTION 40 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), PROPOSED FISH AND WORMS FARMING IN RESPECT PORTION 19 OF THE FARM KLIPVIEW 175 IR.

The Department hereby acknowledges receipt of the Water Use Licence Application document received on 09 August 2017.

Yours sincerely

Dr. K KHOROMBI

DIRECTOR: INSTITUTIONAL ESTABLISHMENT: VAAL PROTO CMA

Letter signed by: Mr K Mudau

Designation: Environmental Officer (Specialized Production): Vaal Proto CMA

Date: 22/08/2017

Signature.....



NATIONAL DEVELOPMENT PLAN
Our Future - make it work

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X995, Pretoria 0001/ Bothongo Plaza East Building, 285 Francis Baard Street, Pretoria
Tel: 012 3921300/ Fax: 012 392 1304

Enquiries: T.T. Mafunisa **Telephone:** (012) 392 1498

Email: MafunisaT@dws.gov.za

P.O.Box 234
Pimville
Soweto
Gauteng
1808

Attention: Thato Khotso Ngake

PROOF OF RECEIPT OF YOUR APPLICATION FORM TO APPLY FOR A WATER USE LICENCE IN TERMS OF SECTION 40 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), PROPOSED FISH FARMING/AQUA CULTURE IN RESPECT PORTION 19 OF THE FARM KLIPVIEW 175 IR.

The Department hereby acknowledges receipt of the Water Use Licence Application document received on 09 August 2017.

Yours sincerely

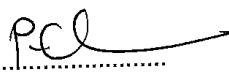
Dr. K KHOROMBI

DIRECTOR: INSTITUTIONAL ESTABLISHMENT: VAAL PROTO CMA

Letter signed by: Mr K Mudau

Designation: Environmental Officer (Specialized Production): Vaal Proto CMA

Date: 24/08/2017

PP Signature.....



NATIONAL DEVELOPMENT PLAN
Our Future - make it work

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix 2: Water Use Application: Dated 13 December 2017



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

GAUTENG PROVINCIAL OPERATIONS

Enquiries: K.M Mudau
Telephone: 012 392 1360
Ref:WU7486

KEDAKE RESOURCES PTY LTD.

PO Box 234
Pimville
Soweto
1808

Dear Ms Thato Ngake

WATER USE LICENCE APPLICATION IN TERMS OF SECTION 40 OF THE NATIONAL WATER ACT, 1998 (ACT 36 of 1998), KEDAKE RESOURCES PTY LTD.

The Department of Water and Sanitation has assessed your water use licence application that was submitted on 15 August 2017. In order for the Department to further process your application the following information is requested;

- I. Geohydrological study as per regulation
- II. Title deeds
- III. Licence processing fee of R114.00
- IV. Project description
- V. Company registration certificate
- VI. Section 21(b) for storage of water.

The information requested must be submitted to the Department on or before 26 March 2018. Failure to submit the required information will result in the Department making a decision based on the available information.

Should you wish to make any further enquiries in this regard please do not hesitate to contact Mr. Khathutshelo Mudau at telephone number 012 392 1360/082 923 6365.

Yours faithfully,

Dr. K Khorommbi
Director: Institutional Establishment
DATE:

Letter 5: Request for Additional Information

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix 3: Proof of municipal zoning



Tel: 016 360 7585 • Fax: 016 360 7538 • E-mail: mothagabo@midvaal.gov.za

DEVELOPMENT PLANNING & HOUSING DEPARTMENT

Our Ref: Town Planning Enquiry no: 1440

11 August 2017

Cell phone no: 073 645 8562

Dear Thato Ngake

TOWN PLANNING ENQUIRY: PROPOSED AQUACULTURE AND CROP CULTIVATION FARMING IN RESPECT OF PORTION 19 OF THE FARM KLIPVIEW 175 IR

Your enquiry dated the 07 August 2017 refers.

Kindly note that Portion 19 of the farm Klipview 175-IR is zoned "Agriculture" in terms of the Randvaal Town Planning Scheme, 1994 and therefore the proposed "aquaculture and crop cultivation farming" is permitted as a primary right on the above mentioned property subject to the submission of building plans.

Furthermore note that the matter was discussed at our Planners's Permission Meeting held on 10th August 2017 which recommended that comments from Social Services Department (Environmental Section) should be obtained regarding the scale of farming activities and also verify with the Deed of Transfer on any form of restrictions that might restrict the proposed development. Below are contact details for Social Services:

Ben Viljoen: Telephone – 016 360 5857/ Email – benv@midvaal.gov.za.

It must be stated that the views/opinions and information herewith contained are provided without prejudice to whatever information may in future be provided to or attained by Council, and that Council would be at liberty to later amend or review its stance related hereto.

Should you require any additional information, please contact the writer during normal office hours.

Regards,





MOYAGABO RAPHASHA
TOWN PLANNER
(Portion 19 of the farm Klipview 175 IR)

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DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix 4: Confirmation of Services by the municipality

PAYMENT TO				MONTH		READING DATE		STAND DETAILS					
2017-12-31				NOVEMBER		PREVIOUS		CURRENT		STAND NO.	STAND SIZE	STAND	
 TAX INVOICE PO Box 9 Meyerton 1960 Tel: 016 360 7400 Fax: 016 360 7521 V.A.T. Reg. No. 4790193525								09000475 8860 STREET ADDRESS 17519 KLIPVIEW TOWN TOWNSHIP KLIPVIEW TWSH STAND CODE					
NANKOP PROPERTIES CC C/O IMRVAN MOOSA NANKA C/O PO BOX 782 MIDVAAL 1875								TOWNSHIP	ERVENNO	STAND NO.	POSITION		
								100	020	09000475	0015		
								PROPERTY VALUATION		DEPOSIT			
								45000		0,00			
YOUR V.A.T. No. 1								ACCOUNT NO.	4000401	DEBIT DATE	2017-12-01		
METER NO.		DATE		DETAILS		METER READING		CONSUMPTION	TARIFF	AMOUNT			
						CURRENT	PREVIOUS						
17-10-01				BALANCE B/FWD						476,99			
17-11-01				090718 RECEIPT 0900918301						-500,00			
17-11-01				ASSESS. RATES + 10%IA					00 01004	1,130,08			
17-11-01				VA DISBUR ON LEVY					00 01004	-502,05			
17-11-01				SEPLUG AM					00 000	168,00			
17-11-01				VAT						23,81			
17-11-01				TOTAL MONTHLY DEBIT						476,40			
17-11-01				AMOUNT ROUNDED UP						0,07			
METER FACTOR		THIS ACCOUNT IS PAYABLE ON OR BEFORE		2017-12-01		AMOUNT PAYABLE		453,00					
 PO Box 9 Meyerton 1960 Tel: 016 360 7400 Fax: 016 360 7521				REMITTANCE ADVICE THIS PART TO BE SUBMITTED WITH PAYMENT ACCOUNT NO. 4002480 DUE DATE 2017-12-01 ***** 8 1200 4000 3481 7 4000401 DUE 453,00									
 XXXXXX 8 1200 4000 3481 7  4000401 DUE 453,00				* Please check your bank and change in the presence of the cashier at point of payment. We reserve the right to alter the information at a later stage. * Attach only the bank slip to your cheque.									

SECTION F: APPENDICES


DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Appendix 5: Provincial Heritage Resources Authority Gauteng Letter: Specialist Report attached in Appendix G

The Kedake Resources Ltd (Pty) Nile Tilapia Fish project

Our Ref: 11325



an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Herrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Andrew Salomon
Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 11325

Date: Wednesday September 20, 2017
Page No: 1

Letter

In terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999)

Attention: Ms Thato Ngake

Aquaculture is the farming of fish, crustaceans, molluscs, aquatic plants, algae, and other aquatic organisms. Growing public demand for a healthy tasty and affordable food is stimulating the industry. The decline in wild fish populations as a result of overharvest and water pollution has promoted the culture of farm-fresh that are grown in contaminant-free waters in indoor tank systems. The Kedake Resources Ltd (Pty) is a start-up company envisioned to establish a medium size aquaculture facility that will produce 60 tons of Nile Tilapia at a commercial scale. Nile Tilapia will be grown over 180 days per six months cycle. The fish will be stocked in the fish rearing tanks and then the fish waste (faeces and uneaten food) flows into the settling tank, the process of biofiltration result in the conversion of toxic ammonia into plant friendly nitrates before the nitrate rich water is sold to Non-profit organisation to irrigate their plants. The proposed facility triggers the water use Act as the facility will use approximately 20m³ per annum in the leased 10ha (figure 1) of land from Mr Imraan Nana in Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province. The lease agreement includes the utilisation of a two boreholes on site. The first borehole is 55 metres 3000l/hr whereas the second borehole is 67 metres capacity 1400l/hr. This aquaculture farm water will be sourced from the existing boreholes on site were thirty fish tanks (250 litters) will be installed on site. Each Fish tank will be pumped with 200 litres of water per week. Four waste water tank five 5000 litter 2700 mm (Diameter and 12200 mm height) will be installed for the storage of waste water. The effluent produced on site will be used to irrigate vegetable gardens. The technology that will be employed on the farm is recirculating aquaculture systems (RAS).

Thank you for your notification regarding this development.

In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that prior to development it is incumbent on the developer to ensure that a **Heritage Impact Assessment** is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.

SECTION F: APPENDICES

DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

The Kedake Resources Ltd (Pty) Nile Tilapia Fish project

Our Ref: 11325



an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Andrew Salomon
Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 11325

Date: Wednesday September 20, 2017
Page No: 2

The quickest process to follow for the archaeological component is to contract an accredited specialist (see the web site of the Association of Southern African Professional Archaeologists www.asapa.org.za) to provide a Phase 1 Archaeological Impact Assessment Report. This must be done before any large development takes place.

The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites.

Where bedrock is to be affected, or where there are coastal sediments, or marine or river terraces and in potentially fossiliferous superficial deposits, a Palaeontological Desk Top study must be undertaken to assess whether or not the development will impact upon palaeontological resources - or at least a letter of exemption from a Palaeontologist is needed to indicate that this is unnecessary. If the area is deemed sensitive, a full Phase 1 Palaeontological Impact Assessment will be required and if necessary a Phase 2 rescue operation might be necessary. Please note that a nationwide fossil sensitivity map is now available on SAHRIS to assist applicants with determining the fossil sensitivity of a study area .

If the property is very small or disturbed and there is no significant site the heritage specialist may choose to send a letter to the heritage authority motivating for exemption from having to undertake further heritage assessments.

Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewsapes must also be assessed.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

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MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

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Date: Wednesday September 20, 2017
Page No: 3

Andrew Salomon
Heritage Officer: Archaeology
South African Heritage Resources Agency

Phillip Hine
Acting Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

ADMIN:
Direct URL to case: <http://www.sahra.org.za/node/405498>

DRAFT Basic Assessment for the proposed Nile Tilapia
Aquaculture farm project, Plot 19 Klipview, Midvaal Local
Municipality, Meyerton - Gauteng Province.

DRAFT
BASIC ASSESSMENT REPORT

Appendix G:
Specialist Reports
(including Terms of Reference)



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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Exemption letter from undertaking a Bioiversity Sttudy for the Kedake (PTY) LTD fish farming project on plot 19 at Klipview Midvaal local Municipality Gauteng: Dated 2 February 2018



Reference: Gaut: 00117-180896
Enquiries: Xoliswa Sobela
Telephone: 011 240 3391
E-mail: Xoliswa.Sobela@gauteng.gov.za

CSIR Implementation Unit (EMS)
P.O. Box 395
Pretoria
0001

Attention: Karabo Mashabela
Tel No: 021 888 2482
Email: kmashabela1@csir.co.za

Dear Madam,

QUERY ON EXEMPTION GRANTED: PROPOSED EXEMPTION FROM UNDERTAKING A TERRESTRIAL BIODIVERSITY STUDY FOR KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT ON PLOT 19 AT KLIPVIEW, MIDVAAL LOCAL MUNICIPALITY

Your request for comments received by the Department on 24 November 2017 has reference.

The enquiry relates to an exemption from undertaking a Terrestrial Biodiversity Study on the above-mentioned site. The site falls within Ecological Support Area and Threatened Ecosystem, however part of the site is transformed. Furthermore, the site is identified as Zone 1 which is undesirable with the land uses within the surrounding neighborhood per the Gauteng Provincial Environmental Management Framework (2015).

It is noted that the Basic Assessment process for the above-mentioned project is being undertaken, therefore the Terrestrial Biodiversity study can be excluded from the specialist studies to be undertaken. However, in terms of NEMBA the activity falls under Category 2 which then requires a permit prior to commencement of the activity.

Should there be any queries concerning this letter, please contact the official of the Department using the contact details indicated above.

Yours faithfully


Mr. S. Mukhola
Acting Chief Director: Sustainable Use of the Environment
Date: 27/2/18

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DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

**Permit for activity of Alien species or listed invasive species for Possession/Grow/Sell Permit number:
5092282104**


REPUBLIC OF SOUTH AFRICA

Department of Environmental Affairs
Issuing Authority, Department of Environmental Affairs, Directorate: Biosecurity Services, Private Bag X 4390, Cape Town, 8000
14 Loop Street, Cape Town, 8001. Tel: 021 441 2748; E-mail: AISpermits@environment.gov.za

**THIS PERMIT IS ISSUED IN TERMS OF CHAPTER 7 OF THE NATIONAL ENVIRONMENTAL
MANAGEMENT: BIODIVERSITY ACT, 2004 (ACT 10 OF 2004) (AS AMENDED) READ TOGETHER WITH
THE ALIEN AND INVASIVE SPECIES REGULATIONS, 2014 (AS AMENDED)**

PERMIT FOR RESTRICTED ACTIVITY OF ALIEN SPECIES OR LISTED INVASIVE SPECIES

Permit Holder Details:

Name: Kedake Resources (Pty)Ltd. **ID/ Company Registration number:** 2013/093237/07
Address: Plot 19, Klipview, Randvaal, 1873 **Permit number :** 5092282104
Date issued: 12/01/2018
Expiry date: 11/01/2023
Amount Paid: R400.00

Exporter/Supplier/Seller/Trader details: **Premises where restricted activity will be carried out:**

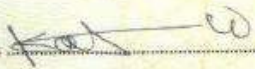
Name: Rydawi Fish Farms **Physical Address:** Plot 19, Klipview, Randvaal, 1873,
Gauteng Province
Address: Plot 219, Ibis Drive, Muldersdrift,
Gauteng Province

Permission is hereby granted to the Permit Holder for the following: Possession/Grow/Sell under the attached permit conditions.

Species details

Scientific Name	Common Name	Quantity	Note
<i>Oreochromis niloticus</i>	Nile tilapia	575kg	Fresh-water fish species (Male)

Permit issued by: Khathulshelo Nelukalo
Place: Cape Town

Signature: 
Official stamp


DEPARTMENT OF ENVIRONMENTAL AFFAIRS
REPUBLIC OF SOUTH AFRICA
DIRECTORATE: BIO-SECURITY
12 JAN 2018
PRIVATE BAG X4390
CAPE TOWN 8000
ALIEN AND LISTED INVASIVE SPECIES PERMIT

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DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Permit for restricted activity of Alien species or listed invasive species for Convey Permit number: 5092282108


REPUBLIC OF SOUTH AFRICA

Department of Environmental Affairs
Issuing Authority, Department of Environmental Affairs, Directorate: Biosecurity Services, Private Bag X 4390, Cape Town, 8000
14 Loop Street, Cape Town, 8001. Tel: 021 441 2748. E-mail: AISpermits@environment.gov.za

**THIS PERMIT IS ISSUED IN TERMS OF CHAPTER 7 OF THE NATIONAL ENVIRONMENTAL
MANAGEMENT: BIODIVERSITY ACT, 2004 (ACT 10 OF 2004) (AS AMENDED) READ TOGETHER WITH
THE ALIEN AND INVASIVE SPECIES REGULATIONS, 2014 (AS AMENDED)**

PERMIT FOR RESTRICTED ACTIVITY OF ALIEN SPECIES OR LISTED INVASIVE SPECIES

Permit Holder Details:

Name: Kedake Resources (Pty)Ltd.	I.D/ Company Registration number: 2013/093237/07
Address: Plot 19, Klipview, Randvaal, 1873	Permit number : 5092282108
	Date issued: 12/01/2018
	Expiry date: 11/04/2018
	Amount Paid: R0.00

Exporter/Supplier/Seller/Trader details:


Name: Rydawi Fish Farms	Premises where restricted activity will be carried out:
Address: Plot 219, Ibis Drive, Muldersdrif, Gauteng Province	Physical Address: Plot 19, Klipview, Randvaal, 1873 Gauteng Province

Permission is hereby granted to the Permit Holder for the following: Convey under the attached permit conditions.

Species details

Scientific Name	Common Name	Quantity	Note
<i>Oreochromis niloticus</i>	Nile tilapia	675kg	Fresh-water fish species (Male)

Permit issued by: **Khathutshelo Nelukalo**
Place: **Cape Town**

Signature: 
Official stamp

DEPARTMENT OF ENVIRONMENTAL AFFAIRS
REPUBLIC OF SOUTH AFRICA
DIRECTORATE: BIO-SECURITY

12 JAN 2018

PRIVATE BAG 42000
CAPE TOWN 8000

ALIEN AND LISTED INVASIVE SPECIES PERMIT

5092282108

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DRAFT BASIC ASSESSMENT REPORT

BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.



CSIR Implementation Unit (EMS)

PO Box 395 Pretoria 0001 South Africa
Tel: 021 888 2482
Fax: 021 888 2893
Email: kmashabela1@csir.co.za

23 November 2017

Gauteng Department of Agriculture and Rural Development

ATTENTION: Mr. Nhlanhla Makhathini

S.U.E Administration Office, Ground Floor

Umnotho House

No. 56 Eloff Street

Johannesburg

2000

Tel: 011 240 3052

Dear Nhlanhla Makhathini

NEMA Query: Letter to verify whether the proposed Project require a Terrestrial Biodiversity study

Motivation for an Exemption from undertaking a Terrestrial Biodiversity study for Kedake Resources (Pty) Ltd Fish Farming project on Plot 19, Klipview Midvaal Local Municipality, Meyerton, -Gauteng Province.

The CSIR, on behalf of the project applicant, hereby wish to apply for an Exemption from undertaking a Terrestrial Biodiversity study for the above-mentioned project (see Figure 1 for the locality map).

As part of the proposed project, listed activities defined under the National Environmental Management Act, Act No. 107 of 1998 (NEMA, 1998), as amended, in terms of the Environmental Impact Assessment (EIA) Regulations, Government Notice (GNR) 327 of 7 April 2017, and in terms of the National Environmental Water Act (NEM:WA) Regulations GNR 921 of 29 November 2013 there under will take place. Relevant listed activities triggered by the proposed activities are indicated below:

GN. R 327, 7 April 2017 Activity 6: *The development and related operation of facilities, infrastructure or structures for aquaculture of-*

- (i) *finfish, crustaceans, reptiles or amphibians, where such facility, infrastructure or structure will have a production output exceeding 20 000 kg per annum (wet weight)*

GN. R 327, 7 April 2017 Activity 8: *The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.*

GNR.327, 7 April 2017 Activity 27: *The clearance of an area of 1 hectare 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 activity; or*

Board members: Prof T. Majazi (Chairperson), Adv G. Badela, Ms P. Baleni, Dr P. Goyns, Dr A. Llobell, Dr R. Masango, Ms M. Maseko, Mr J. Netshitenzhe, Ms A. Noah, Prof M. Phakeng, Dr T. Dlamini (CEO)

www.csir.co.za

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(ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Background:

The Kedake Resources Ltd (Pty) is a start-up company which proposes to establish a medium sized aquaculture facility that will produce 60 tons of Nile Tilapia for commercial purposes. Nile Tilapia will be grown for 180 days over a six month cycle. The fish will be stocked in the fish rearing tanks. The fish waste (faeces and uneaten food) will flow into the settling tank. Biofiltration will occur and will result in the conversion of toxic ammonia into plant friendly nitrates before the nitrate rich water is used for irrigation. The remaining water will be sold to a Non-profit organisation to irrigate their plants.

The proposed project requires that a Basic Assessment be undertaken in terms of the National Environmental Act (Act 107 of 1998), (NEMA), as amended. This Basic Assessment is being undertaken under the Special Needs and Skills Development Programme which was commissioned by the national Department of Environmental Affairs (DEA). The programme is aimed at providing *pro bono* environmental services (including undertaking Basic Assessment processes) for people who are classified as special needs clients/applicants. Applicants can be SMMEs, Community Trusts and certain government programmes. The CSIR is managing this programme on behalf of DEA and has received an application from Kedake Resources (Pty) Ltd for assistance to conduct a Basic Assessment for their proposed aquaculture project.

The Basic Assessment needs to identify and assess potential negative and positive impacts the project will have on the social, economic and natural environment. This assessment will be informed by specialist studies that will be undertaken, e.g a heritage assessment.

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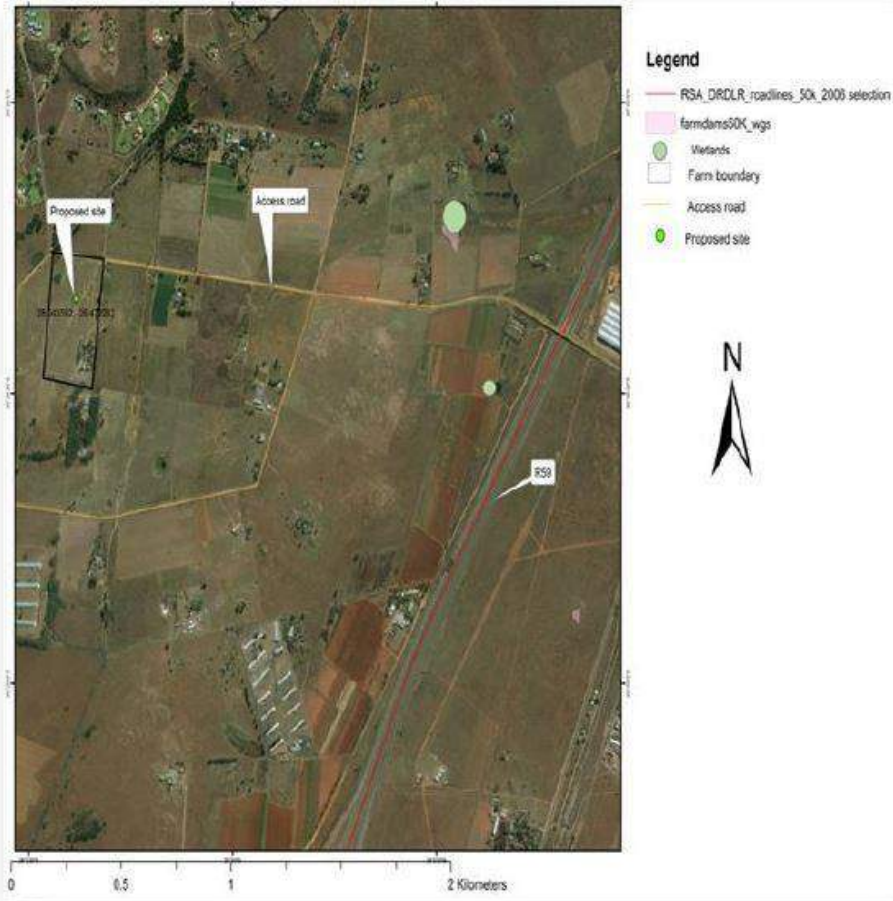


Figure 1: Location of the proposed aquaculture project

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MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Motivation for Exemption from undertaking a Terrestrial Biodiversity study

The CSIR conducted site visits on 30 June 2017 and 10 November 2017. It was found that the site is transformed and is dominated by invasive alien plant species. No wetlands have been identified during the site visit. A desktop assessment was undertaken utilising information from provincial and national databases and utilising Google Earth Imagery (2017) in order to determine whether there has been any change in the status quo of the vegetation on site. According to BGIS the study area is located in the Soweto Highveld Grassland and it falls within Climate Change Corridor and it is listed Vulnerable.

Soweto Highveld Grassland

This is a short to medium-high, dense, tufted grassland dominated almost entirely by *Themeda triandra* occurring on moderately undulating landscapes of the Highveld plateau. According to Mucina et al. (2006), this is a grassland that is characterized by the dominance of the species, *Themeda triandra*, accompanied by a variety of other grasses, such as *Elionurus muticus*, *Eragrostis racemosa*, *Heteropogon contortus* and *Tristachya leucothrix*. This vegetation type is considered to be Endangered (Driver et al., 2005 and Mucina et al., 2006), and whilst the conservation target is 24%, only a small extent is currently protected and 23% is considered to be transformed with 0.2% conserved of a target of 24% and approximately 47% transformed, mainly by cultivation, urban sprawl, mining and building of road infrastructure (Mucina et al. 2006).

Mammals

The potential mammal species that could be found in the project area are those which have been recorded in the grid cell (ADU, 2016) and are listed in Table 1. According to this list, only Roan Antelope and Sable antelope are mammal species of conservation importance (classified as Vulnerable) known to occur in the region, and neither of these was observed during the site visits.

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MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Table 1: Mammal species which could be found in the project area and as recorded in grid cell (ADU, 2016)

Family	Genus	Species	Subspecies	Common name	Red list category	Atlas region endemic
Bathyergidae	<i>Cryptomys</i>	<i>hottentotus</i>		Southern African Mole-rat	Least Concern	Yes
Bovidae	<i>Alcelaphus</i>	<i>buselaphus</i>		Harlebeest	Not listed	Yes
Bovidae	<i>Antidorcas</i>	<i>marsupialis</i>		Springbok	Least Concern	Yes
Bovidae	<i>Connochaetes</i>	<i>gnou</i>		Black Wildebeest	Least Concern	Yes
Bovidae	<i>Connochaetes</i>	<i>taurinus</i>	<i>taurinus</i>	Blue (Common) wildebeest	Least Concern	
Bovidae	<i>Damaliscus</i>	<i>pygargus</i>	<i>phillipsi</i>	Blesbok	Least Concern	
Bovidae	<i>Hippotragus</i>	<i>equinus</i>		Roan Antelope	Vulnerable	Yes
Bovidae	<i>Hippotragus</i>	<i>niger</i>	<i>niger</i>	Sable antelope	Vulnerable	
Bovidae	<i>Kobus</i>	<i>ellipsiprymnus</i>	<i>ellipsiprymnus</i>	Waterbuck	Least Concern	
Bovidae	<i>Kobus</i>	<i>leche</i>		Lechwe	Not listed	Yes
Bovidae	<i>Oryx</i>	<i>gazella</i>		Gemsbok	Least Concern	Yes
Bovidae	<i>Raphicerus</i>	<i>campestris</i>		Steenbok	Least Concern	Yes
Bovidae	<i>Sylvicapra</i>	<i>grimmia</i>		Bush Duiker	Least Concern	Yes
Bovidae	<i>Syncerus</i>	<i>caffer</i>		African Buffalo	Least Concern	Yes
Bovidae	<i>Tragelaphus</i>	<i>angasii</i>		Nyala	Least Concern	Yes
Bovidae	<i>Tragelaphus</i>	<i>oryx</i>		Common Eland	Least Concern	Yes
Canidae	<i>Otocyon</i>	<i>megalotis</i>		Bat-eared Fox	Least Concern	Yes
Cervidae	<i>Dama</i>	<i>dama</i>		Fallow Deer	Introduced	Yes
Emballonuridae	<i>Taphozous</i>	<i>mauritanus</i>		Mauritan Tomb Bat	Least Concern	Yes
Herpestidae	<i>Cynictis</i>	<i>penicillata</i>		Yellow Mongoose	Least Concern	Yes

Amphibia

The following amphibian species were recorded on site (Table 2)

Table 2: Amphibian species recorded on site

Family	Genus	Species	Common name	Red list category
Brevicipitidae	<i>Breviceps</i>	<i>adspersus</i>	Bushveld Rain Frog	Least Concern
Bufo	<i>Sclerophrys</i>	<i>capensis</i>	Raucous Toad	Least Concern
Bufo	<i>Sclerophrys</i>	<i>garmani</i>	Olive Toad	Least Concern
Bufo	<i>Sclerophrys</i>	<i>guturalis</i>	Guttural Toad	Least Concern
Hyperoliidae	<i>Kassina</i>	<i>senegalensis</i>	Bubbling Kassina	Least Concern
Pipidae	<i>Xenopus</i>	<i>laevis</i>	Common Platanna	Least Concern
Pyxicephalidae	<i>Amietia</i>	<i>fuscigula</i>	Cape River Frog	Least Concern
Pyxicephalidae	<i>Cacosternum</i>	<i>boettgeri</i>	Common Caco	Least Concern
Pyxicephalidae	<i>Pyxicephalus</i>	<i>adspersus</i>	Giant Bull Frog	Near Threatened
Pyxicephalidae	<i>Strongylopus</i>	<i>fasciatus</i>	Striped Stream Frog	Least Concern
Pyxicephalidae	<i>Tomopterna</i>			Not listed
Pyxicephalidae	<i>Tomopterna</i>	<i>cryptotis</i>	Tremelo Sand Frog	Least Concern

Invertebrates

According to the ADU (2016), no butterfly species of conservation importance are known to occur in and around the project area. Butterfly species recorded by Mecenero et al. (2013) in the region indicate 54 species which are listed as Least Concern. No Red Data scorpions or spiders are known to occur in the region (ADU, 2016)

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MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Desktop Terrestrial Biodiversity Assessment

National and Provincial Databases

The study area is not located within a formally protected area, an informally protected area, National Protected Areas Expansion Strategy (NPAES) focus areas, any Critical Biodiversity Area or near any Wetlands (National Biodiversity Assessment, 2011 and the National Protected Areas Expansion Strategy, 2010). Various conservation categories have been defined for the vegetation types of South Africa and are listed in Table 3 below.

Table 3: Conservation status thresholds of South African vegetation types (Jewitt, 2011).

Conservation Status	Description
Critically Endangered	Ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subject to an extremely high risk of irreversible transformation. Remaining natural habitat \leq biodiversity target
Endangered	Ecosystems that have undergone degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems. Remaining natural habitat \leq biodiversity target + 15%
Vulnerable	Ecosystems that have a high risk of undergoing significant degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems or endangered ecosystems. Remaining natural habitat \leq 60% of the original area of the ecosystem
Least Threatened	Remaining natural habitat $>$ 60% of the original area of the ecosystem

The development site is dominated by invasive alien plant species which include *inter alia*, *Populus alba*, *Tithonia diversifolia*, *Verbena bonariensis*, *Bidens pilosa*, and *Pennisetum clandestinum*. *Populus alba*, *Tithonia diversifolia* and *Verbena bonariensis* are classified as alien and invader species according to the Conservation of Agricultural Resources Act (CARA, 1983) and National Environmental Management Biodiversity Act (Act no 10 of 2004) (NEMBA). During construction and maintenance activities, these species must be removed and managed to prevent an increase in alien invasion.

This site comprises agricultural plots, roads, agricultural fields, grazing areas and disturbed veld. The vegetation structure and ecological integrity in these areas have been severely transformed. The site comprises invasive alien species, including common garden ornamentals.

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No plant species of conservation importance were encountered nor are any expected to occur in this habitat unit. Due to the extent of vegetation transformation within the habitat unit, the proposed development is highly unlikely to have a significant impact on the general faunal and floral ecology of the area (SAS, 2015).

Vegetation July 2017



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MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Vegetation November 2017



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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.



Acacia mearnsii

Figure 2: Landscape features and vegetation at the site

In light of the factors and motivation provided above, the CSIR hereby applies to the Department for Exemption from undertaking a Terrestrial Biodiversity Assessment. The site is disturbed and does not contain any floral or faunal species of conservation importance. It also does not fall within a protected area or within a CBA. The proposed aquaculture project will not have a negative impact of high significance on terrestrial biodiversity. The project is undertaken under the Special Needs and Skills Development Programme as the applicant qualified as a special needs applicant. The programme has limited funding and hence it strives to keep costs associated with the undertaking of a Basic Assessment Process to a minimum. By doing so, more special needs applicants can be assisted.

We trust that the motivation provided is sufficient to grant Exemption from undertaking a Terrestrial Biodiversity Assessment as the area is highly transformed.

Sincerely,

Minnelise Levendal
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MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Karabo Mashabela
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DRAFT Basic Assessment for the proposed Nile Tilapia
Aquaculture farm project, Plot 19 Klipview, Midvaal Local
Municipality, Meyerton - Gauteng Province.

DRAFT
BASIC ASSESSMENT REPORT

Appendix H:
Environmental Management
Programme (EMPr)



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1 INTRODUCTION

1.1 Purpose of the Environmental Management Programme

This Environmental Management Programme (EMPr) is prepared as part of the requirements of the Environmental Impact Assessment (EIA) Regulations (December 2017, as amended) promulgated under the National Environmental Management Act (NEMA) (Act 107 of 1998, as amended). The purpose of this Environmental Management Programme (EMPr) is to ensure “good environmental practice” by taking a holistic approach to the management and mitigation of environmental impacts during the construction, operation and decommissioning phase of the proposed Aquaponics facility. This EMPr therefore sets out the methods by which proper environmental controls are to be implemented by the Aquaponics’s management. The Draft EMPr is submitted to GDARD as part of the Application for Environmental Authorisation.

This EMPr is considered to be a “live” document that can be updated as new information becomes available during the construction and operational phases, if applicable, of the proposed development. The EMPr is based largely on the findings and recommendations of the BA process. Mitigation measures are carried over from the Basic Assessment Report into the EMPr, except where they are not applicable, and additional measures added where necessary.

The EMPr identifies the following:

- Construction and Operation activities that will impact on the environment;
- Specifications with which the aquaculture project’s management shall comply in order to protect the environment from the identified impacts; and actions that shall be taken in the event of non-compliance.

This EMPr incorporates management plans for the design, construction, operation and decommissioning phases of the project, which consist of the following components:

- **Impact:** The potential positive or negative impact of the development that needs to be enhanced, mitigated or eliminated.
- **Objectives:** The objectives necessary in order to meet the goal; these take into account the findings of the specialist studies.
- **Mitigation/Management Actions:** The actions needed to achieve the objectives, taking into consideration factors such as responsibility, methods, frequency, resources required and prioritisation.
- **Monitoring:** The key monitoring actions required to check whether the objectives are being achieved, taking into consideration responsibility, frequency, methods and reporting.

This EMPr specifies the management actions necessary to ensure minimal environmental impacts, as well as procedures for monitoring these impacts associated with the proposed activity. In terms of legal compliance, this EMPr is designed to satisfy Appendix 4 of Government Notice Regulation 326 of 7 April 2017, as presented in Table 1 below.

This EMPr also intended to ensure that the principles of Environmental Management specified in the National Environmental Management Act are promoted during the different phases of the proposed development of aquaponics facility.

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Table 1. Compliance with Appendix 4 of Government Notice Regulation 326 of 7 April 2017 and Section 24N of the National Environmental Management Act 107 of 1998.

Requirements according to Appendix 4 of GNR 326 of 7 April 2017	Section
(1) An EMPr must comply with section 24N of the Act and include-	Section 1.3
a) details of - the EAP who prepared the EMPr; and the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Appendix I
b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 3
c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	Section 3, Figures 1 and 2
d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	Section 4
(i) planning and design;	Section 4
(ii) pre-construction activities;	Section 4
(iii) construction activities;	Section 4
(iv) rehabilitation of the environment after construction and where applicable post closure; and	Section 4
(v) where relevant, operation activities;	Section 4
e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 4
f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to –	Section 4
i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	
ii) comply with any prescribed environmental management standards or practices;	Section 4
iii) comply with any applicable provisions of the Act regarding closure, where applicable; and	N/A
iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	N/A
g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 4
h) frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 4
i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 4
j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 4
k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 4
l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 4
m) an environmental awareness plan describing the manner in which-	Section 4
(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and	

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Requirements according to Appendix 4 of GNR 326 of 7 April 2017	Section
(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	
n) any specific information that may be required by the competent authority.	N/A

1.2 Environmental Assessment Practitioner

The Environmental Assessment Practitioners (EAPs) who prepared this EMPr are from the Environmental Management Services (EMS) group of the Council for Scientific and Industrial Research (CSIR). The CSIR is amongst the largest multi-disciplinary research and development organizations in Africa, which undertakes applied research and development for implementation across the continent, as well as providing consulting services to industry, government and international agencies. It is one of the leading organisations in South Africa contributing to the development and implementation of environmental assessment and management methodologies and sustainability science.

This EMPr is prepared by the following EAPs at CSIR:

Karabo Mashabela – Karabo holds a MSc degree in Environmental Sciences. She has two years of experience in the environmental management field working on the Aquaculture SEA in the CSIR. Karabo is currently one of the project managers of the Special Needs and Skills Development Programme of the CSIR (for aquaculture projects).

Minnelise Levendal – Minnelise is a Senior EAP in the EMS group of the CSIR and holds a Master's degree in Biological Science (Botany) from the Stellenbosch University. She is a registered Pr.Sci.Nat and has 16 years of experience in Environmental Management (which includes ten years working as an EAP). Before she joined the CSIR she was employed at the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) for five years where she assessed EIAs, BAs and EMPs. Minnelise is currently managing various EIAs for wind and solar renewable energy projects in South Africa. She was the CSIR project manager for the 100 MW Ubuntu Wind Energy Facility near Jeffreys Bay (Environmental Authorisation granted in June 2012), as well as the 50 MW Banna Ba Pifhu Wind Energy Facility proposed by WKN Windcurrent near Humansdorp in the Eastern Cape (Environmental Authorisation granted in July 2014). She was the project manager of ten BAs for wind monitoring masts in South Africa as part of the National Wind Atlas Project of the Department of Energy. Environmental Authorisation from the DEA for all the ten masts was obtained in 2010.

2 ROLES AND RESPONSIBILITIES

For the purposes of this EMPr, the following roles and responsibilities have been identified:

- Farm Manager (acting on behalf of the project developer, Kedake Resources (Pty) Ltd);
- The Contractor(s); and Environmental Control Officer.

2.1 Farm Manager

The Farm Manager is designated as overall responsible on behalf of Kedake Resources (Pty) Ltd to oversee the construction, operational and decommissioning aspects of this tilapia aquaponics project and to make sure that the EMPr is implemented and the conditions of Environmental Authorisation are adhered to throughout

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the project lifecycle. He/she will also be responsible for rehabilitation of disturbed areas during construction. The Farm Manager will have a team supporting him/her in this role.

Note that in the *Initial Planning and Design phase* of the project, the Farm Manager may not have been appointed and therefore the EMPr makes direct mention of Kedake Resources (Pty) Ltd as being responsible for actions in this phase.

2.2 The Contractor(s)

The Contractors are the persons or companies appointed to undertake construction or decommissioning of this aquaculture project. The Contractor(s) will be responsible for the overall construction and decommissioning activities on site and compliance with all conditions of authorization as well as drafting the Method Statements that are required as part of the EMPr in order to protect environmental resources, minimise pollution and to rehabilitate disturbed areas and its implementation thereof.

2.3 Environmental Control Officer (ECO)

The Environmental Control Officer will be part of the project staff and will advise the Contractor on all environmental matters relating to the works, in terms of this EMPr. The Environmental Control Officer will also be responsible for monitoring construction activities on site to also ensure that all the recommendations of the EMPr are adhered to during construction phase. He/she will also be responsible for the implementation of the EMPr on site during the operations phase. The ECO can be an internal staff member of the Contractor assigned to the project. Given the phased development of this tilapia farming project, the ECO may simultaneously be overseeing the construction and operations phases of the project.

3 PROJECT DESCRIPTION

Kedake Resources (Pty) Ltd is a small-scale start up fish farming enterprise located on an 10 hectare farm on Plot 19 Klipview Midvaal Local Municipality Meyerton-Gauteng Province.. There is nothing on site currently. The proposed a 60 tons of fish production, will target to supply major supermarkets and butcheries within the Mabopane, Soshanguve, Ga-Rankuwa and the Tshwane Markets. The proposed development will be a great socio-economic value to the fish industry in the area, to the consumer, the business, and to allow local employment opportunities, as well as contributing greatly to the farming industry of South Africa (Figure 1).

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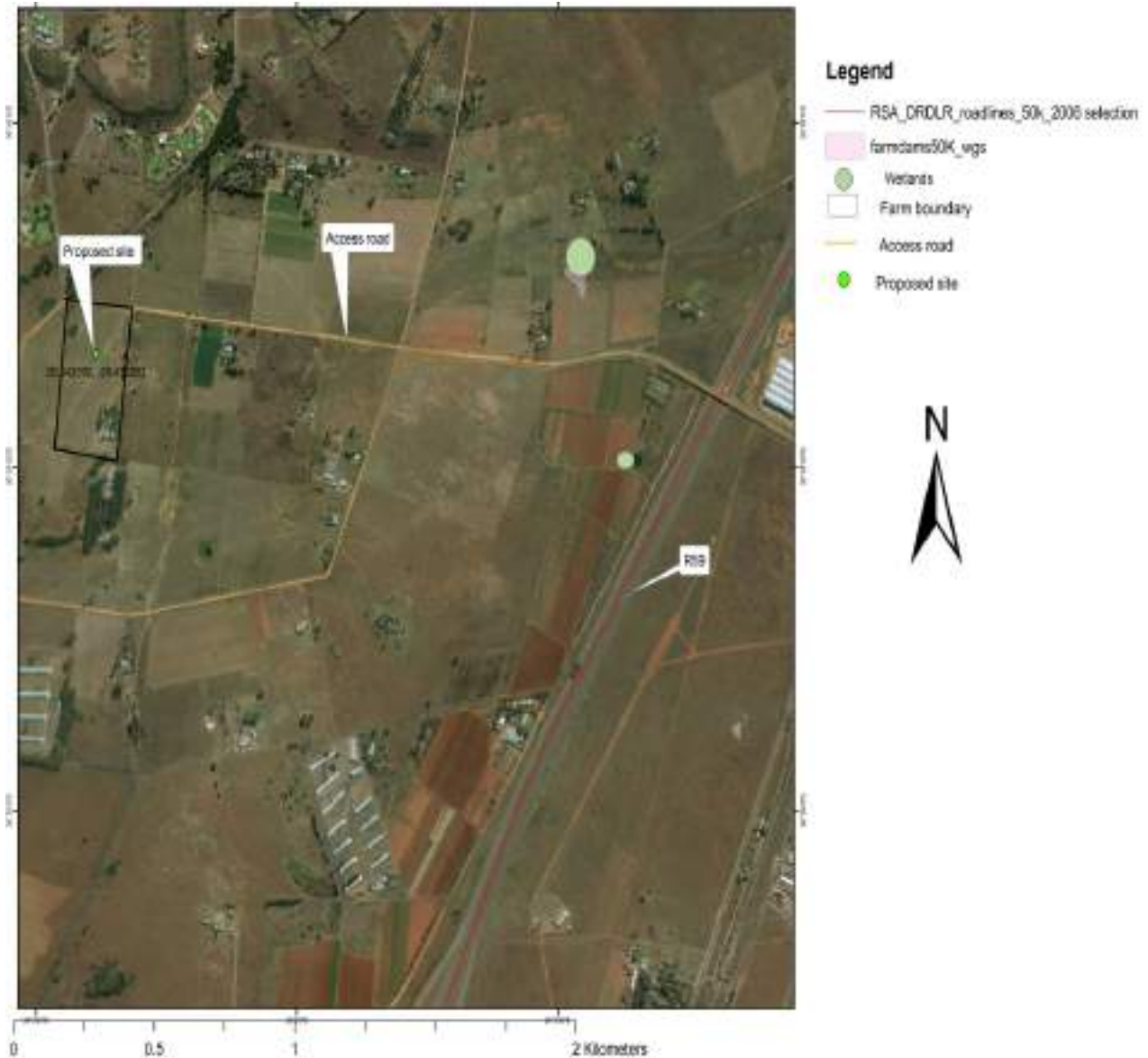


Figure 1: Regional locality of the proposed aquaculture facility

Kedake Resources (Pty) production plan is set to increase production with two harvests of 30 tons of Nile tilapia per six months (i.e January to June and June to December). The water requirement for this project will be approximately 430 m³ per annum for the two harvesting period.

The Nile tilapia (*Oreochromis niloticus*) commonly known as Kurper is a species a cichlid fish native to Africa from Egypt south to east and central Africa, and as far west as Gambia. It is also native to Israel, and numerous introduced populations exist outside its natural range.

The area of the farm is 10 hectares and the planned footprint of the aquaponics project is approximately 8 hectares. The construction phase is expected to give rise to approximately 6-12 new jobs; and the operations phase is planned to provide new jobs.

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3.1 Technology choice and water management

The enterprise is aquaculture facility (i.e. system of aquaculture in which the waste produced by farmed fish or other aquatic creatures supplies the nutrients for plants grown. Water will be sourced from the existing borehole on site and the effluent will be used to grow vegetables (i.e. mushrooms).

3.2 Proposed project components and layout

The main project components and the proposed layout plan for the production of up to 60 000 kg per annum fish production is shown in Figure 2 and described below. The proposed infrastructure of the aquaponics facility will entail the following:

Proposed Operations:

- Installation of 45 Fish Tanks (250 l each)
- Installation of four waste water tanks (5 000 l each)
- Pump Room
- Solar Panel as to provide electricity to pump water
- Water requirements: 432m³ Litres annually

Forty five (45) fish g tanks and five waste tanks:

- Waste tanks Four 5000 litre fish rearing tanks of 2700 mm diameter
- Forty five 2500 litre fish rearing tanks of 2200 mm diameter
- The existing structure (30m length x 10m breadth) consist of:
 - Post-harvest/ Packing of fish
 - Processing fish house
 - Workers facilities (kitchen, toilet etc) (80m length x 40m breadth)
 - Office Space
 - Existing borehole

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Figure 2: Layout plan for the proposed aquaculture facility

3.3 Identification of “no go” areas and avoidance of sensitive areas and buffers

There are no specific “no go” areas on the site that need to be avoided, based on environmental sensitivities or other factors. This was confirmed in the BA Report that included specialist studies on Botanical survey CSIR, hydrogeology by Impulse Water (Pty) Ltd and Environmental Assurance (Pty) Ltd, and on heritage by Heritage Contracts and Archaeological Consulting CC. The sensitivity mapping in the BA Report also reviewed the SANBI BGIS database and the National Freshwater Ecosystem Priority Areas (NFEPA) database and confirmed that there are no sensitivities on site from these databases that need to be avoided.

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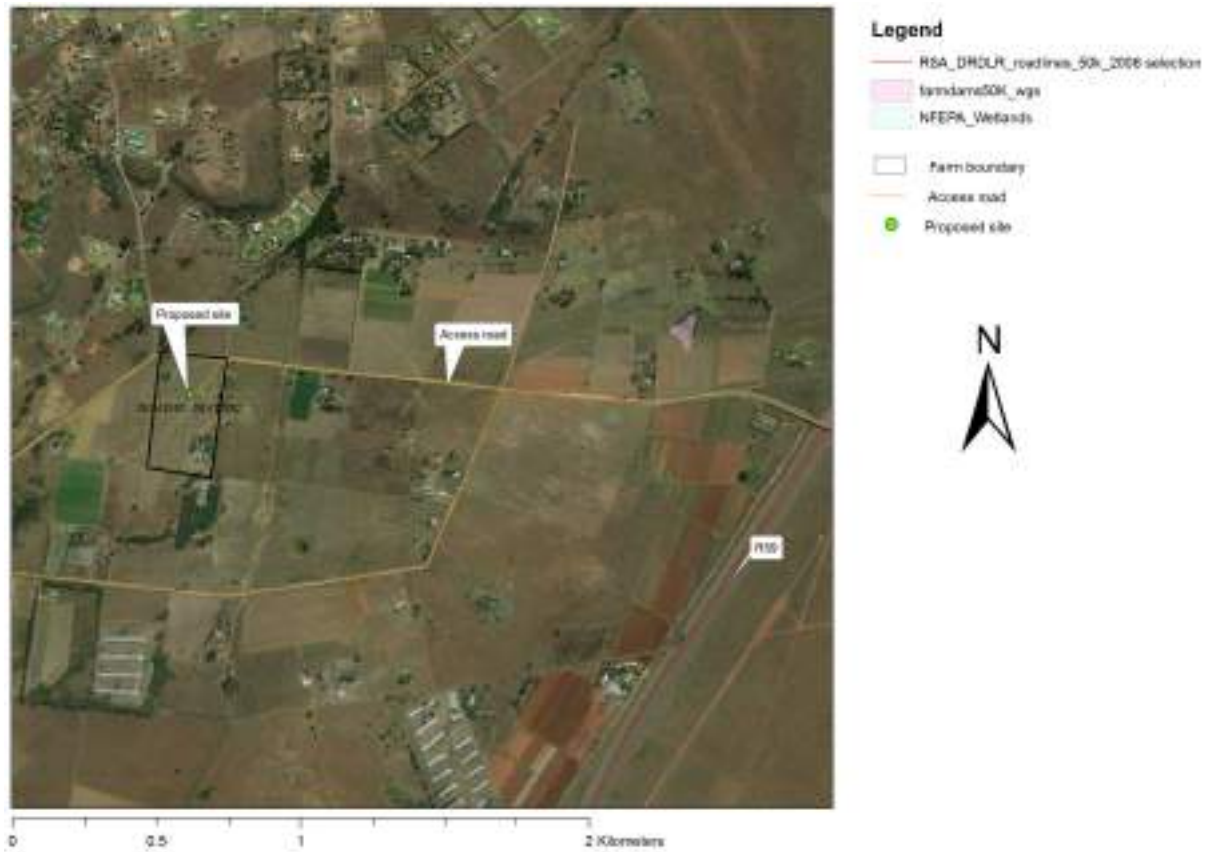


Figure 3: Layout of the proposed development with sensitivities

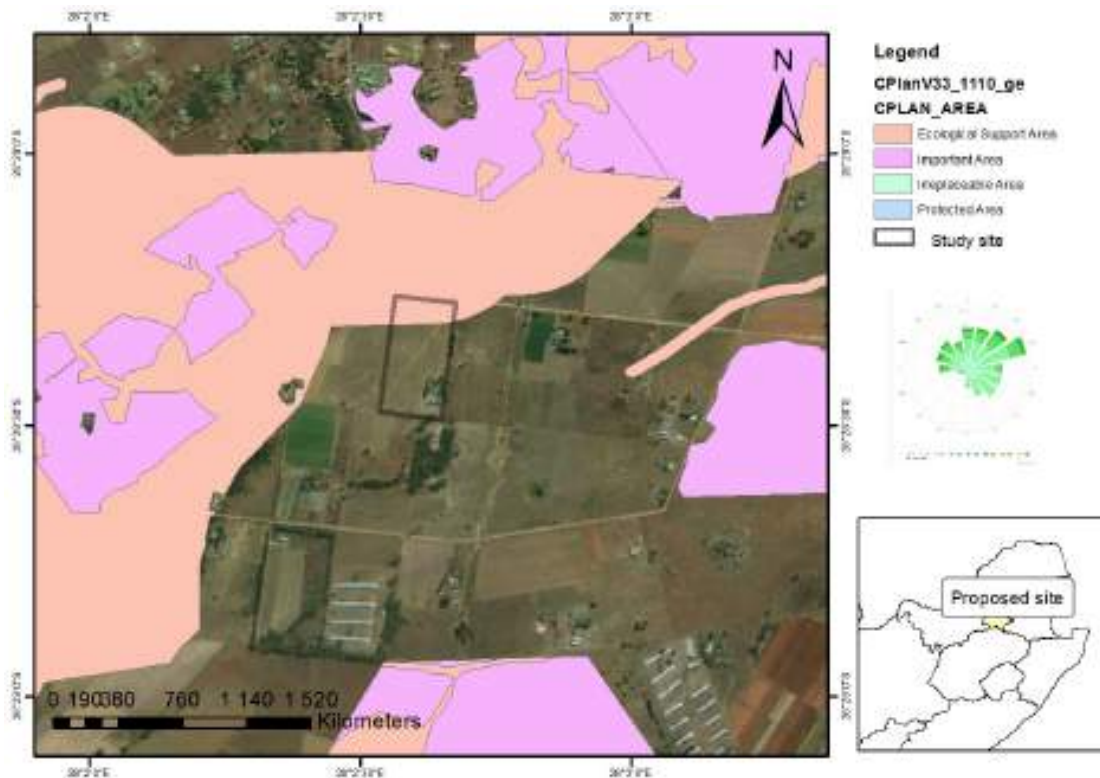


Figure 4: Layout of the proposed development with sensitivities

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3.4 Technical operational management aspects of this project

Additional information on key technical operational management aspects is included in the EMPr. These are:

- Site groundwater management plan to ensure sustainable water supply to the project from the borehole on site and avoid unnecessary loss of water
- Aquaculture day-to-day water quality management plan, with reference to the South African Water Quality Guidelines for Agricultural Use.

Water quality is the most important aspect of the day-to-day management of the aquaculture facility and requires constant monitoring. Dissolved oxygen (DO) is one of the most important parameters in fish farming in cold water, where there is much more oxygen available for the fish to consume than in warm water. Thus farming fish in warm water, as for tilapia, requires even more intense oxygen monitoring and control than farming in cold water.

4 ENVIRONMENTAL MANAGEMENT PROGRAMME, INCLUDING MANAGEMENT OBJECTIVES, MANAGEMENT OUTCOMES, MANAGEMENT ACTIONS AND MONITORING

The EMPr is provided for the following phases of the project:

- Design and planning phase
- Construction phase
- Operational phase
- Decommissioning phase.

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4.1 Management objectives and actions for the Design and Planning Phase

No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
1	Ensure the footprint of the aquaponics project is limited to the allocated 10 hectares (the total farm area is 10 ha). This will avoid impacts on any flora and fauna of conservation importance or of medicinal value.	Detailed site design to ensure that the project footprint is restricted to the proposed 10 hectares.	Review of final project plan when ready for submission to Local Authorities for local planning approval. This plan must include designated areas for specific activities, such as storage of topsoil, general waste, parking for vehicles, construction materials etc.	Check final project plan when ready for submission to Local Authorities	Kedake Resources (Pty) Ltd
2	Ensure the detailed design for waste-water management for the project prevents pollution of surrounding areas by avoiding any waste-water discharges and including design measures to manage potential spills.	Water balance plan and detailed design for waste-water to avoid discharges on site that could impact on surrounding land use.	Review of final project design when ready for submission to Local Authorities for local planning approval.	Once-off during design followed by regular control	Kedake Resources (Pty) Ltd
3	Design a detailed storm water management plan for the facility to prevent erosion and/or impact on surrounding areas.	The design of the stormwater management system must attenuate water on the farm and prevent erosion.	Use of swales or areas where water can soak-away, as part of the stormwater design for the project.	Once-off during design followed by regular control	Kedake Resources (Pty) Ltd
4	Minimise the risk of introduction and/or proliferation of alien plant and animal species on site, with the planned rehabilitation focused on indigenous plant species.	Prepare a site rehabilitation plan as part of the planning for the construction phase that includes establishment of indigenous vegetation.	Include the need for a site rehabilitation plan using indigenous vegetation as part of the construction tender documents to contractors, to ensure this is part of the construction phase planning.	Check site rehabilitation plan is included as Contractual requirement	Kedake Resources (Pty) Ltd
5	Contractors understand and plan for the Construction management actions, in order to meet the EMP requirements.	Project developer conveys the construction management requirements to the Contractors	Ensure that Contractors incorporate the Construction management actions into their project proposals and contracts, such as the designation of areas for specific activities, good house-keeping requirements, waste recycling, pest management, etc.	Check contract documents with Contractors	Kedake Resources (Pty) Ltd
6	ECO appointed to oversee Construction phase	Appoint an ECO	Advertise for and source a suitably qualified ECO, including preparation of a monthly site monitoring checklist to be used by the ECO.	Appointment of ECO to be finalised before start of Construction	Kedake Resources (Pty) Ltd

4.2 Management objectives and actions for the Construction Phase

No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
1	Ensure the footprint of the aquaponics project is limited to the allocated 10 hectares (the total farm area is 10 ha). This will avoid impacts on any flora and fauna of conservation importance or of medicinal value. This also avoids heritage impacts such as grave, as there are no graves on the project site.	Demarcate 10 ha construction area and ensure that vehicle access is limited to this zone.	Demarcate the site using hazard tape and clearly specify the access route for vehicles.	Start of construction	Farm Manager
2	Activities are limited to designated areas to avoid environmental risks.	Designate areas on site for specified activities.	Designate areas on site for specified activities, such as storage of topsoil, temporary storage and sorting of general waste, parking for vehicles, storage of construction materials, washing of vehicles, etc.	Start of construction	Farm Manager
3	Good house-keeping applied on site during construction	Good house-keeping actions are specified for all Contractors on site	Good house-keeping actions are specified for all Contractors on site, such as keeping construction activities neat and tidy, vehicles and machinery to be properly serviced to reduce noise and atmospheric emissions, waste skips to be clearly labelled, contractors to wear adequate Personal Protective Equipment (PPE), pest management, etc.	Monthly, using the site monitoring checklist	ECO
4	Avoid pollution of the surrounding environment as a result of the handling, temporary storage and disposal of general solid waste. (No hazardous waste storage has been identified as part of the	Reduce risk of soil and groundwater contamination as a result of incorrect storage, handling and disposal of general	<ul style="list-style-type: none"> General waste and hazardous waste should be stored temporarily on site in suitable (and correctly labelled) waste collection bins and skips (or similar). 	Monthly, using the site monitoring checklist	ECO

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No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
	construction phase).	waste.	<p>Waste collection bins and skips should be covered with suitable material, where appropriate.</p> <ul style="list-style-type: none"> Should the on-site storage of general waste and hazardous waste exceed 100 m³ and 80 m³ respectively, then the National Norms and Standards for the Storage of Waste (published on 29 November 2013 under Government Notice 926) must be adhered to. Ensure that the construction site is kept clean at all times and that construction personnel are made aware of correct waste disposal methods. Ensure that sufficient general waste disposal bins are provided for all construction personnel throughout the site. These bins must be emptied on a regular basis. No solid waste may be burned on site. The Contractor should provide adequate waste skips (or similar) on site and the Construction Contract should specify that the Contractor must be responsible for the correct disposal of the contents of the waste skips. All construction waste (including rubble) should be frequently removed from site and correctly disposed using a licensed municipal landfill site Establish appropriate emergency procedures for accidental contamination of the surroundings. Waste recycling should be incorporated into the facility's operations as far as possible. 		
5	Avoid pollution caused by spillage or discharge of construction waste water into the surrounding environment and/or via stormwater from the site.	Prevent the spillage of waste water from construction through management of stormwater, sewage, chemicals, oils, liquid wastes etc.	<ul style="list-style-type: none"> Contractor(s) to submit a Method Statement for Stormwater Management during the construction phase before commencing construction activities. Provide secure storage for oil, chemicals and other waste materials in order to prevent contamination of stormwater runoff. Regular inspections of stormwater infrastructure should be undertaken to ensure that it is kept clear of all debris and weeds. 	Monthly, using the site monitoring checklist	ECO
6	Rehabilitation of the sites makes use of indigenous vegetation and top soil from the site, to enhance retention of natural seed-bank in the soil and minimise the risk of introducing alien plants.	Implement the rehabilitation plan for the construction phase.	Topsoil from excavations is to be stockpiled on site and used in subsequent rehabilitation, and may also contain an indigenous seed bank. Rehabilitation and planting to use indigenous and water-wise species.	Monthly, using the site monitoring checklist	ECO
7	Minimise erosion impacts from stormwater run-off	Divert and impede surface water flows from areas with construction activities	Contractor(s) to submit a Method Statement for Stormwater Management during the construction phase before commencing construction activities that includes actions to manage stormwater on site, such as diversion and impediment of flow.	Monthly, using the site monitoring checklist	ECO
8	Minimise dust impact from construction vehicles, especially during winter when the soil is dry.	Apply dust abatement measures	Use dust abatement measures such as spraying water on the road (if sufficient water is available), or adding mulch to soil, or use of soil-binding sprays or applications. Construction vehicles travelling on unpaved roads to not exceed a speed of 40 km/hour.	Monthly, using the site monitoring checklist	ECO

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No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
9	Minimise the visual impact of the construction phase on surrounding residents and on local fauna	Apply standard visual impact mitigation for construction projects	Apply standard visual impact mitigation for construction projects, such as limiting construction activities to day time hours, minimising security and construction lighting, minimise dust impacts from vehicles, etc.	Monthly, using the site monitoring checklist	ECO
10	Prevent disturbance to and damage to heritage artefacts, should any be found on site during construction.	Prevent damage and destruction to fossils, artefacts and materials of heritage significance.	The construction workers must be briefed on the potential uncovering of heritage features and what actions are then required. If artefacts of heritage significance are discovered, the activities in that area must cease and the South African Heritage Resources Agency (SAHRA) must be immediately contacted.	Monthly, using the site monitoring checklist	ECO
11	Maximise the socio-economic benefits from employment creation and skills development during the construction phase, which is expected to give rise to approximately 6-12 new jobs.	Maximise local employment and local business opportunities to promote and improve the local economy.	Enhance the use of local labour and local skills as far as reasonably possible. Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained	Specify local requirements in tender documents and review during the construction phase	Farm Manager

4.3 Management objectives and actions for the Operations Phase

No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
1	Abstraction of groundwater from the borehole on site is conducted sustainably and without unnecessary loss of water resources	Measure, monitor, evaluate and update management measures continuously through the life of project.	<p>Impulse Water (Pty) Ltd, 2018, (in a specialist study for the BA Report) recommends the following pumping schedule for suitable use:</p> <ul style="list-style-type: none"> The borehole (KFFBH1) must be pumped at 0.1 l/sec (360 l/hr) for 240min (4-hr), then allow for another 480min (8-hr) of groundwater recovery. Based on the above-mentioned pumping cycle a total of 1440 litre (1.44 m³) of water could be pumped per 12-hour period. This pumping cycle can be repeated for 2 times within a 24-hour period. A total water volume of 2880 l/day (2.88 m³/day) could be abstracted by following the recommended pumping schedule. All the abstracted water must be reticulated into one 3000 litre water storage tank onsite. The water storage tank must be kept full at all times and this can be achieved by means of installing Float Switches into the water storage tank to “top-up” the tank when the water level drops. The water from the storage tank must then in turn be reticulated back in to the main water supply pipeline feeding the fish dams, by means of a small buster pump. Lastly a “run dry protection” must be installed on the submersible pump, in order to protect the submersible pump from damaged in the event the water level drops to the pump intake at ~50m. 	<p>Groundwater should only be abstracted according to the pumping cycle.</p> <p>Conduct quarterly monitoring of groundwater levels and quality, including water quality across the site and abstraction volumes.</p>	Farm Manager

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
2	Quality of groundwater abstracted is suitable for the project	Sampling and analysis of groundwater	<ul style="list-style-type: none"> Groundwater to be analysed against the South African Water Quality Guidelines (for agriculture) and the SANS241:2015 Drinking Water Standards and the relevant Water Use license for the project. Ensure that there are appropriate control measures in place for any contamination event. 	Quarterly sampling for water quality analysis, with full analysis in April and October, and abbreviated analysis in January and July	Farm Manager
3	Responsible water demand management in order to avoid unnecessary waste of water	Prepare site water balance	One person at management level to be responsible for managing the overall site water balance and preparing an annual site water balance report.	Site water balance report to be prepared annually	Farm Manager
4	Waste water management is conducted effectively to avoid impacts on the fish as well as the receiving environment. The facility will process the waste to fish meal or sell it to Non Profitable Organizations.	Waste water management to be implemented as crucial to successful ongoing operations	<ul style="list-style-type: none"> The higher the rate of recirculation the less new water will be used, and the less discharge water will need to be treated. Waste recycling should be incorporated into the facility's operations as far as possible. Designate a secured, access restricted, signposted room for the storage of potentially hazardous substances such as herbicides, pesticides and medications. All hazardous waste should be disposed of at an appropriate licensed facility for this Educate workers regarding the handling of hazardous substances and about waste management and emergency procedures with regular training and notices and talks. Establish appropriate emergency procedures for accidental contamination of the surroundings from waste-water spills. 	Conduct daily water quality monitoring using the Operational phase monitoring checklist.	Farm Manager or ECO
5	Avoid impacts on biosecurity and transmission of diseases.	Prevent the attraction of pests and animals carrying infectious diseases and ensure the containment of disease outbreaks if the occur.	<ul style="list-style-type: none"> Fish mortalities must be identified and removed immediately from tanks. Workers must be effectively trained to handle sick and dead fish. Emergency procedures that aim to address the potential for disease outbreaks must be developed and implemented where applicable Eggs or fish stocked in the facility must be disease free and preferably from a certified disease free strain Water used must be disease free or sterilised before going into the system No visitors or staff should enter the farm sick. 	Use the Operational monitoring checklist. Conduct monthly for first two years of operation, and thereafter quarterly.	ECO
6	Apply energy efficient means of water temperature regulation	Water heating technology may be needed in winter to warm the water for the tilapia.	Apply energy efficient means of water heating in winter, such as use of heat pumps or solar power.	Quarterly monitoring of energy efficiency and electricity usage.	Farm Manager

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
7	Apply effective pest control measures to minimise spread of pests and associated disease risks.	Prevent, detect and control pest infestations before they become a problem, through frequent and careful cleaning, monitoring and control.	<ul style="list-style-type: none"> Ensure that there is effective storm water drainage around the facility Ensure that the facility is sufficiently ventilated to keep floors and feedstock as dry as possible. Clean floors regularly, removing any excess feed, excrement etc. Remove all trash, and sources of feed and water for pests from the outside perimeter of the facilities. Control rodents through effective sanitation. Ensure that measures to control pests are tightly restricted to areas where these are problematic. Pest control measures should be taxon-specific. If necessary, advice should be sought from an appropriate specialist. 	Quarterly using the Operational monitoring checklist.	Farm Manager
8	Maintain site using indigenous vegetation	Limit risk of alien vegetation spreading on site	Plant only locally indigenous flora if landscaping needs to be done	Throughout Operation	Farm Manager and ECO
9	Minimise the visual impact of the operations phase on surrounding residents and on local fauna	Apply standard visual impact mitigation for agricultural operations	<ul style="list-style-type: none"> Apply standard visual impact mitigation for the operation of agricultural projects, such as minimising security and construction lighting, ensure that all outdoor lights are angled downwards and/or fitted with hoods, etc. Where possible, using timer switches or motion detectors to control lighting in areas that are not occupied continuously (if permissible and in line with minimum security requirements). Switching off lights when not in use in line with safety and security. 	Monthly, using the site monitoring checklist	ECO
11	Maximise the socio-economic benefits from employment creation and skills development during the operations phase, which is expected to give rise to approximately 24 jobs in phase 1, increasing to 74 permanent jobs and 46 seasonal jobs in phase 2.	Maximise local employment and local business opportunities to promote and improve the local economy.	Enhance the use of local labour and local skills as far as reasonably possible. Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained.	Annual review of employee profile and employment & training opportunities provided to people from the local area.	Farm Manager

4.4 Management objectives and actions for the Decommissioning Phase

No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
1	Conduct decommissioning in accordance with legislated requirements applicable at the time.	Identify applicable legal requirements	Identify applicable legal requirements for site clearing and clean-up at the time of decommissioning.	To be determined	Farm Manager
2	Prevent proliferation of alien invasive plant and animal species	By law, remove and dispose of Category 1b alien species on site. All Category 2 species that remain on site must require a permit.	Remove Category 1b alien species that may have appeared on site using mechanical methods and minimise soil disturbance as far as possible.	Conduct monthly during decommissioning using the Decommissioning checklist	ECO
3	Limit disturbances to surrounding residents and local fauna and flora from decommissioning activities	Minimise impacts of noise, dust and lightning.	Limit demolition activities to day time hours. Minimise vehicle activity and ensure vehicles are properly serviced. Apply effective dust management.	Conduct monthly during decommissioning using the Decommissioning checklist	ECO
4	Potential spillage of effluent to the surrounding environment (from portable sanitation facilities for decommissioning personnel).	Reduce the spillage of domestic effluent and the impact thereof on the environment.	Normal sewage management practises should be implemented. These include ensuring that portable sanitation facilities are regularly emptied and the resulting	Conduct monthly during decommissioning using the Decommissioning checklist	ECO

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

No.	Impact management objectives and outcomes	Management actions	Methodology to achieve the management actions	Monitoring method & frequency	Responsibility
			sewage is transported safely (by an appointed service provider) for correct disposal at an appropriate, licenced facility. Proof of disposal (in the form of waste disposal slips or waybills) should be retained on file for auditing purposes.		
5	Discharge of contaminated stormwater into the surrounding environment.	Reduce the contamination of stormwater.	The appointed Contractor should compile a Method Statement for Stormwater Management during the decommissioning phase.	Conduct monthly during decommissioning using the Decommissioning checklist	ECO
6	Pollution of the surrounding environment as a result of the handling, temporary storage and disposal of solid waste.	Reduce soil and groundwater contamination as a result of incorrect storage, handling and disposal of general and hazardous waste.	<ul style="list-style-type: none"> General waste (i.e. building rubble, demolition waste, discarded concrete, bricks, tiles, wood, glass, plastic, metal, excavated material, packaging material, paper and domestic waste etc.) and hazardous waste (i.e. empty tins, paint and paint cleaning liquids, oils, fuel spillages and chemicals etc.) generated during the decommissioning phase should be stored temporarily on site in suitable (and correctly labelled) waste collection bins and skips (or similar). Waste collection bins and skips should be covered with suitable material, where appropriate. Ensure that general waste and hazardous waste generated are removed from the site on a regular basis and disposed of at an appropriate, licensed waste disposal facility by an approved waste management Contractor. Waste disposal slips or waybills should be kept on file for auditing purposes as proof of disposal. Ensure that sufficient general waste disposal bins are provided for all personnel throughout the site. These bins must be emptied on a regular basis. 	Conduct monthly during decommissioning using the Decommissioning checklist	ECO
7	Emissions from decommissioning vehicles and generation of dust as a result of earthworks and demolition.	Reduce dust emissions during decommissioning activities.	<ul style="list-style-type: none"> Ensure that cleared (excavated) areas and unpaved surfaces are sprayed with water (obtained from an approved source) to minimise dust generation. Approved soil stabilisers may be utilised to limit dust generation. Ensure that decommissioning vehicles travelling on unpaved roads do not exceed a speed limit of 40 km/hour. 	Conduct monthly during decommissioning using the Decommissioning checklist	ECO
8	Potential health injuries to workers during decommissioning, especially activities like demolition.	Prevent health effects such as on hearing impacts and respiratory illnesses on personnel.	Ensure that all decommissioning personnel are provided with adequate PPE for use where appropriate. Decommissioning personnel must wear proper hearing protection.	Check continuously during decommissioning	ECO

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DRAFT BASIC ASSESSMENT REPORT

**BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
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5 ENVIRONMENTAL EDUCATION AND AWARENESS PLAN

The environmental awareness training should be undertaken when necessary and it is the responsibility of the farm manager to ensure that every person who will be coming to site is educated about the general conduct. Furthermore a register must be signed as part of the monitoring process; this will serve as proof that workers were made aware of the sensitivities on site. A method statement will be compiled by the contractor prior to commencement of construction activities. The method statement will comply with all the recommendations that have been outlined in the EMPr of the project with aims to protect environmental resources, minimise pollution and to rehabilitate disturbed areas.

The Farm Manager will be responsible for implementing a programme that will raise environmental awareness for all construction workers. The environmental awareness training will be presented to all workers in order to promote a successful implementation of the EMPr. An Environmental Control Officer shall be appointed to assist the manager with effective implementation of the programme and to also ensure compliance with all conditions of authorisations received.

The Awareness training shall emphasise the importance of an EMPr in order to promote compliance. All the environmental impacts that are associated with the proposed development should be outlined together with the proposed mitigation measures.

During construction, the ECO must conduct awareness training with the Contractors that includes: the need to conserve water and makes all affected parties aware of the water conservation and water demand management practices on site, as well as water pollution avoidance and reporting procedures for incidents; briefing construction workers on the potential uncovering of heritage features, what these might look like, and what actions are then required.

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6 ENVIRONMENTAL MONITORING, REPORTING AND AUDITING

The construction area must be inspected and the Environmental Control Officer must compile a report after each inspection. Should non-compliance be recorded, the construction activities must be ceased until remedial actions are taken to ensure compliance. The report must be submitted to the Farm manager who can then address any issues raised with the engineer and contractor. The reports will be kept as part of record keeping and will be sent to GDARD should they be requested.

The Environmental Control Officer will be responsible for monitoring of construction activities on site to also ensure that all the recommendations of the EMPr are adhere to during the construction phase of the programme. Monitoring of compliance with all the recommendations should be done regularly in order to protect the natural resources on site.

Written records should entail the method statement, the approved EMPr that consists of monitoring reports, a site incident register, relevant authorisations that have been obtained and records of any meeting and training held with the construction workers. The farm manager will also be responsible for post construction phase monitoring programme i.e. clearance of Invasive Alien Species on site, the removal of debris during flooding etc.

7 REFERENCES

Jacob Bregnballe. A Guide to Recirculation Aquaculture An introduction to the new environmentally friendly and highly productive closed fish farming systems. FAO 2015.

Recirculation Aquaculture by M.B. Timmons & J.M. Ebeling, NRAC Publication No. 01-007, Cayuga Aqua Ventures, USA, 2002, ISBN 978-0-9712646-2-5

The EMPr is also informed by the following specialist studies conducted as part of the Basic Assessment process.

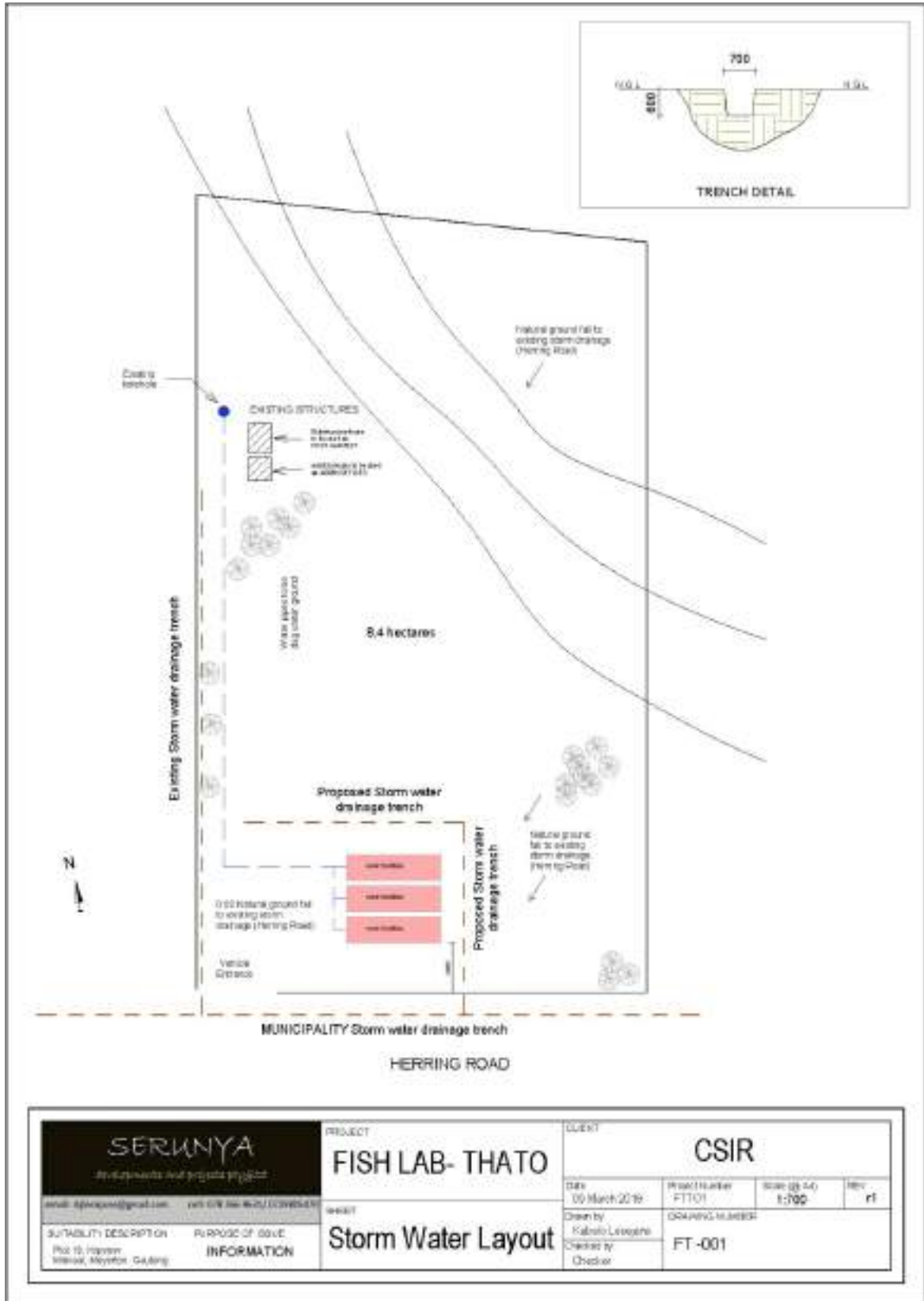
Name	Company/organisation	Specialist topic
CSIR team	CSIR	Flora fauna and wetlands
David van der Merwe	Environmental Assurance (Pty) Ltd	Geohydrology study
Du Toit Wilken	Environmental Assurance (Pty) Ltd	Geohydrology study
Matthew Damhuis	Impulse water	Geohydrology study
Jaco Breytenbach	Impulse water	Geohydrology study
Jaco van der Walt	HCAC	Heritage impact assessment


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Storm water management layout



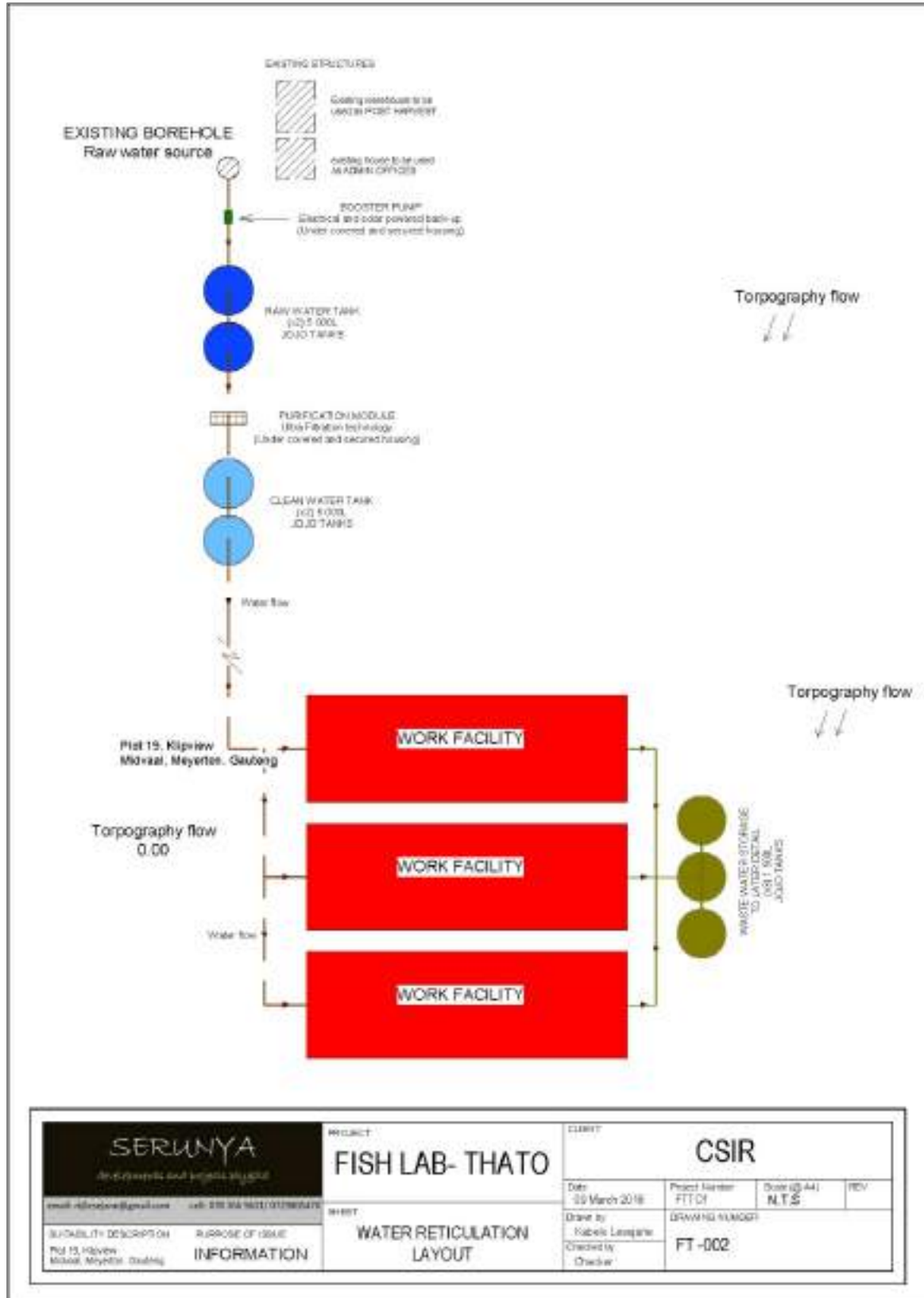
		PROJECT FISH LAB- THATO	CLIENT CSIR		
<small>email: info@seruya.com web: www.seruya.com</small>		DATE 09 March 2019	PROJECT NUMBER FT01	SCALE (S1) 1:500	REV. rf
SUBTITLE DESCRIPTION Plot 19 Herring Midvaal, Meyerton, Gauteng	PURPOSE OF DRAWING INFORMATION	CLIENT Storm Water Layout		DRAWING NUMBER FT-001	
		Drawn by Kabelo Leroetha		Checked by Chabier	

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Storm water management layout



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BASIC ASSESSMENT REPORT

Appendix I: Curriculum Vitae of the EAPs

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Annexure I.1: Minnelise Levendal (Project Leader)



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CURRICULUM VITAE OF MINNELISE LEVENDAL – PROJECT LEADER

Name of firm	CSIR
Name of staff	Minnelise Levendal
Profession	Environmental Assessment and Management
Position in firm	Project Manager
Years' experience	8 years
Nationality	South African
Languages	Afrikaans and English

CONTACT DETAILS:

Postal Address: P O Box 320, Stellenbosch, 7599
Telephone Number: 021-888 2495/2661
Cell: 0833098159
Fax: 0865051341
e-mail: mlevendal@csir.co.za

BIOSKETCH:

Minnelise joined the CSIR Environmental Management Services group (EMS) in 2008. She is focussing primarily on managing Environmental Impact Assessments (EIAs), Basic Assessments (BAs) and Environmental Screening studies for renewable energy projects including wind and solar projects. These include an EIA for a wind energy facility near Swellendam, Western Cape South Africa for BioTherm (Authorisation granted in September 2011) and a similar EIA for BioTherm in Laingsburg, Western Cape (in progress). She is also managing two wind farm EIAs and a solar Photovoltaic BA for WKN-Windcurrent SA in the Eastern Cape. Minnelise was the project manager for the Basic Assessment for the erection of ten wind monitoring masts at different sites in South Africa as part of the national wind atlas project of the Department of Energy in 2009 and 2010..She was also a member of the Project Implementation Team who managed the drafting of South Africa's Second National Communication under the United Nations Framework Convention on Climate Change. The national Department of Environmental Affairs appointed the South African Botanical Institute (SANBI) to undertake this project. SANBI subsequently appointed the CSIR to manage this project.

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MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

EDUCATION:

- | | | |
|--------------------------|--------------------------------|------|
| ▪ M.Sc. (Botany) | Stellenbosch University | 1998 |
| ▪ B.Sc. (Hons.) (Botany) | University of the Western Cape | 1994 |
| ▪ B.Sc. (Education) | University of the Western Cape | 1993 |

MEMBERSHIPS:

- International Association for Impact Assessment (IAIA), Western Cape (member of their steering committee from 2001-2003)
- IUCN Commission on Education and Communication (CEC); World Conservation Learning Network (WCLN)
- American Association for the Advancement of Science (AAAS)
- Society of Conservation Biology (SCB)

EMPLOYMENT RECORD:

- **1995:** Peninsula Technicon. Lecturer in the Horticulture Department.
- **1996:** University of the Western Cape. Lecturer in the Botany Department.
- **1999:** University of Stellenbosch. Research assistant in the Botany Department (3 months)
- **1999:** Bengurion University (Israel). Research assistant (Working in the Arava valley, Negev – Israel; 2 months). Research undertaken was published (see first publication in publication list)
- **1999-2004:** Assistant Director at the Department of Environmental Affairs and Development Planning (DEA&DP). Work involved assessing Environmental Impact Assessments and Environmental Management Plans; promoting environmental management and sustainable development.
- **2004 to present:** Employed by the CSIR in Stellenbosch:
 - September 2004 – May 2008: Biodiversity and Ecosystems Services Group (NRE)
 - May 2008 to present: Environmental Management Services Group (EMS)

PROJECT EXPERIENCE RECORD:

The following table presents a list of projects undertaken at the CSIR as well as the role played in each project:

Completion Date	Project description	Role	Client
2011 <i>(in progress)</i>	EIA for the proposed Electrawinds Swartberg wind energy project near Moorreesburg in the Western Cape	Project Manager	Electrawinds
2010-2011 <i>(in progress)</i>	EIA for the proposed Ubuntu wind energy project, Eastern Cape	Project Manager	WKN Windkraft SA
2010-2011 <i>(in progress)</i>	EIA for the proposed Banna ba pifhu wind energy project, Eastern Cape	Project Manager	WKN Windkraft SA
2010-2011	BA for a powerline near Swellendam in the Western Cape	Project Manager	BioTherm Energy (Pty Ltd)
2010-2011 <i>(Environmental Authorisation granted in September 2011)</i>	EIA for a proposed wind farm near Swellendam in the Western Cape	Project Manager	BioTherm Energy (Pty Ltd)
2010 <i>(complete)</i>	Basic Assessment for the erection of two wind monitoring masts near Swellendam and Bredasdorp in the Western Cape	Project Manager	BioTherm Energy (Pty Ltd)
2010 <i>(complete)</i>	Basic Assessment for the erection of two wind monitoring masts near Jeffrey's Bay	Project Manager	Windcurrent (Pty Ltd)

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Completion Date	Project description	Role	Client
	in the Eastern Cape		
2009-2010 <i>((Environmental Authorisations granted during 2010))</i>	Basic Assessment Process for the proposed erection of 10 wind monitoring masts in SA as part of the national wind atlas project	Project Manager	Department of Energy through SANERI; GEF
2010	South Africa's Second National Communication under the United Nations Framework Convention on Climate Change	Project Manager	SANBI
2009 <i>(Environmental Authorisation granted in 2009)</i>	Basic Assessment Report for a proposed boundary wall at the Port of Port Elizabeth, Eastern Cape	Project Manager	Transnet Ltd
2008	Developing an Invasive Alien Plant Strategy for the Wild Coast, Eastern Cape	Co-author	Eastern Cape Parks Board
2006-2008	Monitoring and Evaluation of aspects of Biodiversity	Project Leader	Internal project awarded through the Young Researchers Fund
2006	Integrated veldfire management in South Africa. An assessment of current conditions and future approaches.	Co- author	Working on Fire
2004-2005	Biodiversity Strategy and Action Plan Wild Coast, Eastern Cape, SA	Co-author	Wilderness Foundation
2005	Western Cape State of the Environment Report: Biodiversity section. (Year One).	Co- author and Project Manager	Department of Environmental Affairs and Development Planning

PUBLICATIONS:

Bowie, M. (néé Levendal) and Ward, D. (2004). Water status of the mistletoe *Plicosepalus acaciae* parasitic on isolated Negev Desert populations of *Acacia raddiana* differing in level of mortality. *Journal of Arid Environments* 56: 487-508.

Wand, S.J.E., Esler, K.J. and **Bowie, M.R** (2001). Seasonal photosynthetic temperature responses and changes in ¹³C under varying temperature regimes in leaf-succulent and drought-deciduous shrubs from the Succulent Karoo, South Africa. *South African Journal of Botany* 67:235-243.

Bowie, M.R., Wand, S.J.E. and Esler, K.J. (2000). Seasonal gas exchange responses under three different temperature treatments in a leaf-succulent and a drought-deciduous shrub from the Succulent Karoo. *South African Journal of Botany* 66:118-123.

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BASIC ASSESSMENT FOR THE KEDAKE RESOURCES (PTY) LTD FISH FARMING PROJECT, PLOT 19 KLIPVIEW
MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

LANGUAGES

<i>Language</i>	<i>Speaking</i>	<i>Reading</i>	<i>Writing</i>
<i>English</i>	<i>Excellent</i>	<i>Excellent</i>	<i>Excellent</i>
<i>Afrikaans</i>	<i>Excellent</i>	<i>Excellent</i>	<i>Excellent</i>

Minnelise Levendal



March 2018

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MIDVAAL LOCAL MUNICIPALITY, MEYERTON - GAUTENG PROVINCE.

Annexure I.2: Karabo Mashabela (Project Manager)



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Position in Firm:	Environmental Assessment Practitioner (Intern)
Full Name:	Karabo Mashabela
Professional Registration:	<i>Cand.Sci.Nat</i> Environmental Sciences
Date of Birth:	11/12/1989
Nationality:	South African
Marital Status:	Single
Language Proficiency:	English, N Sotho, Swati, Ndebele, Zulu and Tsonga

BIOSKETCH:

Karabo holds a master's degree in Environmental Science and Geography from University of Limpopo Turfloop campus. Her undergraduate degree was a Bachelor of Science with majors in Environmental Science and GIS and remote sensing. She is currently working as an environmental assessment practitioner intern at the Council for Scientific and Industrial Research (CSIR). Karabo has been the co-author of a various special need and skills programme Basic Assessment. She assisted with the Umgeni water desalination plant and wind and solar SEA.

She is also a project officer for National Strategic Environmental Assessment for Aquaculture within the CSIR EMS.

EMPLOYMENT TRACK RECORD:

The following table presents a list of projects that Karabo Mashabela has been involved in to this date:

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Completion Date	Project description	Role	Client
<i>In progress</i>	National Strategic environmental assessment for Aquaculture	Project Officer	National Department of Environmental Affairs and National Department of Agriculture Forestry and Fisheries
<i>In progress</i>	Special Needs and Skills Development Programme (DEA-CSIR)	Project Manager conducting Environmental services such as basic Assessments and Environmental Screening Studies.	Various SMME's and Community Trusts
<i>In progress</i>	Strategic Environmental Assessment (SEA) Wind and Solar	Project assistant	National Department of Environmental Affairs
<i>Completed</i>	EIA for Desalination plants on the KZN Tongaat.	Project member- Public Participation Process, stakeholder engagement and project support.	Umgeni Water
<i>Completed</i>	Basic assessment for Khanayni Agricultural cooperative	Project manager	DEA
<i>Completed</i>	Intubayethu screening study Eastern Cape	Project manager	DEA
<i>Final Submitted</i>	Basic Assessment for Blue-Green Aquaculture PTY Ltd	Project manager	DEA
<i>In progress</i>	Basic assessment for Makwarela fisheries	Project manager	DEA
<i>In progress</i>	Basic assessment for Garelekeng Gape CC	Project manager	DEA
<i>In progress</i>	Basic assessment for Lwando Piggery	Project manager	DEA
<i>In progress</i>	Basic assessment for FishLab	Project manager	DEA

EMPLOYMENT RECORD:

- **2016** Environmental Scientist and Assessment Practitioner (Intern) for National Strategic environmental assessment. Council for Scientific and Industrial Research – Consulting and Analytical Services (CAS) – Stellenbosch
- **2016** Environmental consultant and contractor trainer Dwarsrivier Chrome Mine
- **2011-2015** University of Limpopo Geography Department - GIS and Remote Sensing lab assistant, facilitating GIS practical's using Quantum GIS and ARC-GIS software.
- **2010** National greening in the 2010 national environmental volunteer project ambassador for the department during the FiFa world cup (LEDET) Limpopo Department of Economic Development, Environment and Tourism

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QUALIFICATIONS/EDUCATION:

<i>Qualification Obtained:</i>	BSc (Environmental and Resource Studies)
<i>Name of Institution:</i>	University of Limpopo
<i>Duration:</i>	3 years (2009-2011)
<i>Major Subjects Passed:</i>	<ul style="list-style-type: none">• Environmental Management and Planning, Impact Studies (EIA, SEA, SIA, Risk Assessment, etc)• Solid Waste Management, Water Treatment Processes and Technology, Natural Resource Ecology, Remote Sensing and Geographic Information System (GIS)
<i>Qualification obtained:</i>	BSc Honours (Geography and Environmental Sciences)
<i>Name of Institution:</i>	University of Limpopo (2012)
<i>Major Subjects Passed:</i>	<ul style="list-style-type: none">• Elements of Environmental Management• (Environmental Law, Environmental Management• Systems (ISO 14001), EIA, SEA, SIA, IEM, Risk Assessment,• Project Management, Environmental Monitoring and Auditing)• GIS-Applications• Demography• Geography Research Methods
<i>Honours Research Topic:</i>	"Waste management strategies at Lebowakgomo Central Business Area"
<i>Qualification obtained</i>	MSc Geography and Environmental Sciences (GIS and Remote Sensing)
<i>Name of Institution:</i>	University of Limpopo (2013-2015)
<i>Master of Science Research Topic:</i>	Onsite greywater reuse as a water conservation Method: A case study of Lepelle-Nkumpi local Municipality, Limpopo Province of South Africa
<i>Masters results:</i>	Completed

TRAINING, CONFERENCES AND PROFESSIONAL REGISTRATIONS:

- Media and Science Training Accreditation through Jive Media Africa (2016)
- IAIA WC Workshop for roles and responsibilities of an environmental control officer (2016)
- IAIAAsa 2016 Annual National Conference Port Elizabeth (17-18 August 2016) Presented MSc study CSIR collaboration
- Project Management accreditation through the CSIRs Innovation, Leadership and Learning Academy Project Management Course (2016)
- Participated in the ACCESS Student Heritable planet workshop (2011)
- Registered as a Candidate Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP) (Reg #: 116164)
- Member of the IAIAAsa (Membership no: 5322)
- University of Stellenbosch introduction to advanced GIS for professionals