



JDJ PROPERTIES

Proposed New Addition to Tiffany's Shopping Centre within the iLembe District Municipality, KwaZulu- Natal Province

**Draft Environmental Management
Programme**

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JDJ PROPERTIES

PROPOSED NEW ADDITION TO TIFFANY'S SHOPPING CENTRE WITHIN THE ILEMBE DISTRICT MUNICIPALITY, KWAZULU-NATAL PROVINCE

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

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LIST OF TERMS USED

Construction Phase:

The activities pertaining to the preparation for and the physical construction of the proposed development.

Contractor (C):

Persons/organisations contracted by the Developer to carry out parts of the work for the planned development. This includes the main contractor engaged and any additional sub-contractors appointed for the project.

Developer (DEV):

The Developer is the JDJ Properties.

Engineer (E):

Person/organisation appointed by the Client to oversee the work of all consultants, sub-developers, contractors, residents and visitors.

Environment:

The environment is defined in terms of the National Environmental Management Act, No 107 of 1998, as the surroundings within which humans exist and that are made up of – the land, water and atmosphere of the earth; micro-organisms, plant and animal life; any part or combination of (i) and (ii) and the interrelationships among and between them; and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

Environmental Compliance Officer (ECO):

Person/organisation appointed by the Developer who will provide direction to the Engineer concerning the activities within the Construction Zone, and who will be responsible for conducting the environmental audits of the project during the construction phase of the project according to the provisions of the Environmental Management Programme (EMPr).

Environmental Management Programme (EMPr):

The EMPr is a detailed plan for the implementation of the mitigation measures to minimise negative environmental impacts during the life cycle of a project. The EMPr contributes to the preparation of the contract documentation by developing clauses to which the contractor must adhere for the protection of the environment. The EMPr specifies how the construction of the project is to be carried out and includes the actions required for the Post-Construction Phase to ensure that all the environmental impacts are managed for the duration of the project's life cycle.

Neighbours:

Considered to be the properties adjoining the proposed site.

Operational Phase (Post Construction):

The period following the Construction Phase, during which the proposed development will be operational.

Pre-Construction Phase:

The period prior to commencement of the Construction Phase, during which various activities associated with the preparation for the Construction Phase will be undertaken.

Site Preparation:

This entails vegetation clearance or disturbance of ground to allow for construction to take place or material required for construction to be stored on site. Site preparation forms part of the construction phase. It excludes continued farming in the interim in an environmentally appropriate manner.

Rehabilitation:

Rehabilitation is defined as the return of a disturbed area to a state which approximates the state (where possible) which it was before disruption. Rehabilitation for the purposes of this specification is aimed at post-reinstatement re-vegetation of a disturbed area and the insurance of a stable land surface. Re-vegetation must aim to accelerate the natural succession processes so that the plant community develops in the desired way, i.e. promote rapid vegetation establishment.

Site Manager:

The person, representing the Contractor, responsible for all the Contractor's activities on the site including supervision of the construction staff and activities associated with the Construction Phase. The Site Manager will liaise with the Principal Agent in order to ensure that the project is conducted in accordance with the Environmental Management Programme.

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DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

1. INTRODUCTION AND BACKGROUND

JDJ Properties (the Applicant) is proposing the expansion of the Tiffany's Shopping Centre located within the iLembe District, KwaZulu Natal Province. The proposed expansion will be located on the site adjacent to the shopping centre which is situated approximately 5.8 km from the Dolphin's Coast.

SiVEST SA (Pty) Ltd has subsequently been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the draft Environmental Management Programme (EMPr) (in line with the National Management Act, 1998 (Act107 of 1998)) for the proposed expansion of the Tiffany's Shopping Centre located within the iLembe District, KwaZulu Natal Province (**Figure 1**) (EDTEA Reference Number: **DC29/0010/2023**).

This EMPr provides a set of guidelines for the environmental management of all works executed by the Developer, Engineer, Contractor and Sub-contractor/s to have a minimum impact on the environment in accordance with all relevant legislation, policies and standards. In this context, it should be viewed as a dynamic or "living" document which may require updating or revision during the life cycle of the development to address new circumstances as the need arises. It is essentially, a written plan of how the environment is to be managed in practical and achievable terms. The EMPr shall be deemed to have contractual standing on the developer and contractors onsite.

The effectiveness of the EMPr is limited by the level of adherence to the conditions set forth in this report by the Developer and the Contractor and Sub-contractors. It is further assumed that compliance with the EMPr will be monitored and audited on a regular basis as set out in the EMPr and contractual clauses.

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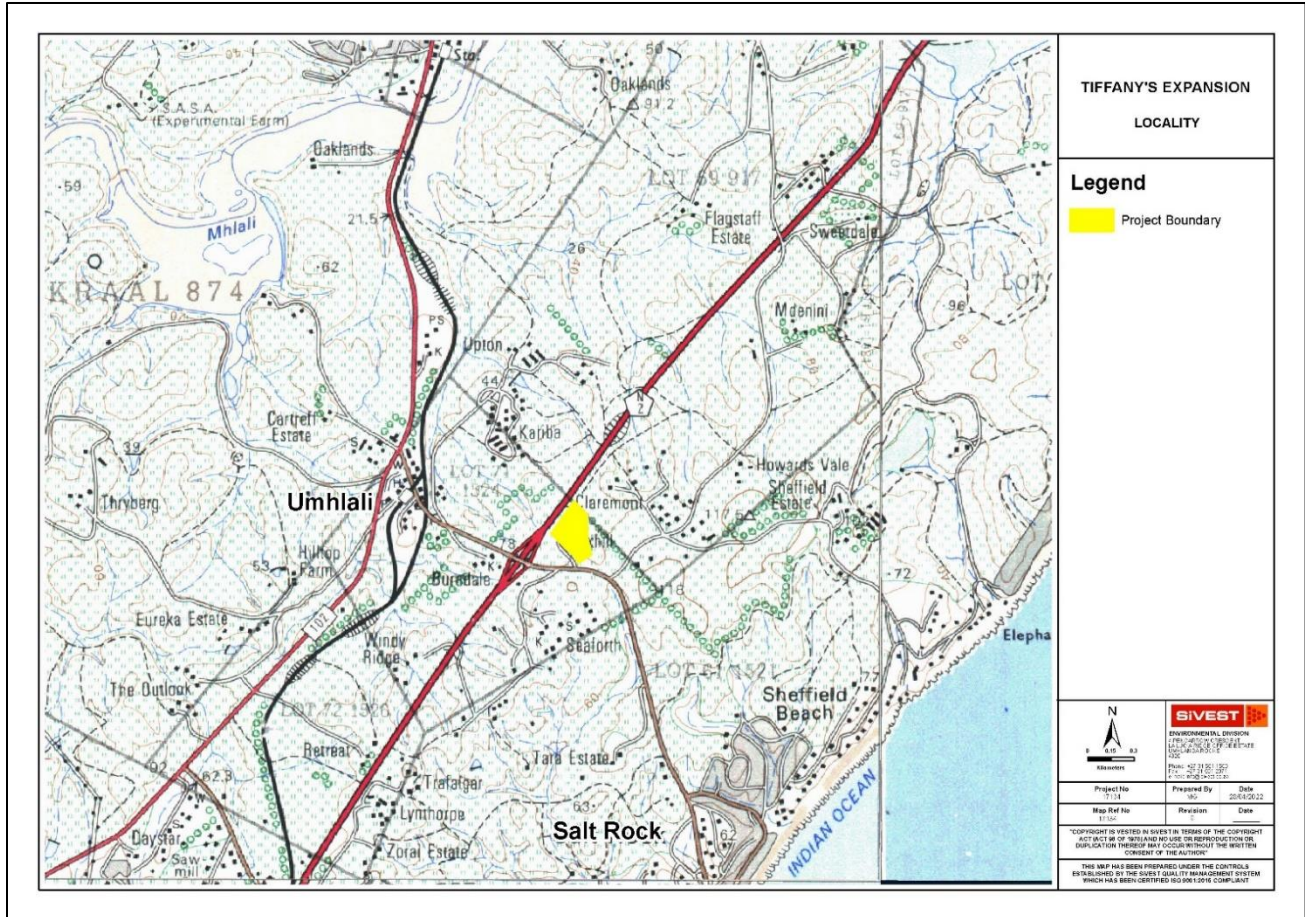


Figure 1: Regional Locality

1.1 Content Requirements for an Environmental Management Programme

The content requirements for an EMPr (as provided in Appendix 4 of the EIA Regulations 2014, as amended), as well as details of which section of the report fulfils these requirements, are shown in **Table 1** below.

Table 1: Content Requirements for an EMPr

2014 EIA Regulations, as amended.	Requirements for an EMPr	Location in this EMPr
Appendix 4, Section 1. (1)	An EMPr must comply with section 24N of the Act and include -	Refer to relevant reference sections below:
Appendix 4, Section 1 (a)	Details of –	-
	(i) The EAP who prepared the EMPr; and	Section 3.1 Section 3.2
	(ii) The expertise of that EAP to prepare an EMPr, including a curriculum vitae.	Section 3.2

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2014 EIA Regulations, as amended.	Requirements for an EMPr	Location in this EMPr
Appendix 1, Section 3 (b)	a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 4.1
Appendix 4, Section 1 (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 should be avoided, including buffers;	Figure 1 and Figure 4
Appendix 4, Section 1 (d)	a description of the impact management outcomes, 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— (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	Section 9
Appendix 4, Section 3 (f)	a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to — (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; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	Section 9
Appendix 4, Section 3 (g)	the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 9
Appendix 4, Section 3 (h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 9
Appendix 4, Section 3 (i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 8 Section 9
Appendix 4, Section 3 (j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 9
Appendix 4, Section 3 (k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 9
Appendix 4, Section 3 (l)	a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 9
Appendix 4, Section 3 (m)	an environmental awareness plan describing the manner in which— (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 11

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2014 EIA Regulations, as amended.	Requirements for an EMPr	Location in this EMPr
Appendix 4, Section 3 (n)	any specific information that may be required by the competent authority.	Section 7.3 Section 10
Appendix 4 Section 2	Where a government notice gazetted by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply.	Generic EMPr has been compiled and included.

2. DETAILS OF THE APPLICANT

2.1 Name and Contact Details of the Applicant

Table 2: Name and Contact Details of the Applicant

Business Name of Applicant	JDJ Properties
Physical Address	Main Road 330, Salt Rock, 4390
Postal Address	n/a
Postal Code	4390
Telephone	033 346 1628
Fax	n/a
Email	jdjaccountants@telkomsa.net

3. DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

3.1 Name and contact details of the Environmental Consultants

Table 3: Name and Contact Details of the Environmental Consultants who prepared the report

Business Name of EAP	SiVEST SA (PTY) Ltd
Physical Address	4 Pencarrow Crescent, La Lucia Ridge Office Estate, Mhlanga Rocks
Postal Address	P O BOX 1899, Umhlanga Rocks
Postal Code	4320
Telephone	031 581 1576
Email	luvanyan@sivest.co.za

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3.2 Names and expertise of representatives of the EAP

Table 4: Names and Details of the expertise of each representative of the EAP involved in the preparation of this report

Name of representative of the EAP	Educational Qualifications	Professional Affiliations	Experience (years)
Michelle Nevette (<i>Cert.Sci.Nat.</i>)	MEnvMgt. (Environmental Management)	SACNASP Registration No. 120356 EAPASA Registration No. 2019/1560 IAIA	19
Luvanya Naidoo (<i>Pr.Sci.Nat.</i>)	BSc. (Geography)	SACNASP Registration No. 126107 EAPASA Registration No. 2019/1404 IAIA	11
Prisantha Govender (<i>Reg. EAP</i>)	BSc. Hons (Environmental Management)	EAPASA Registration No. 2020/2590 IAIAsa	4.5

CV's of SiVEST personnel and EAP declaration is attached in **Appendix A**.

3.3 Names and expertise of the specialists

The table below provides the names of the specialists involved in this application process:

Table 5: Names and expertise of specialists

Company	Name of representative of the specialist	Specialist Study	Educational Qualifications / Professional Affiliations	Experience (years)
SiVEST South Africa (Pty) Ltd	Mark Summers (<i>Cand.Sci.Nat</i>)	Terrestrial Ecology	MSc. Ecological Science SACNASP Registration No. 120309	6
Verdent Environmental	Ryan Edwards (<i>Pr.Sci.Nat.</i>)	Wetlands	MSc. Environmental Science SACNASP Registration No. 400089/13	14
Umlando Archaeological Surveys and Heritage Management	Gavin Anderson	Heritage	M. Phil in Archaeology / Social Psychology	
GeoZone GeoServices	Gerald Davie	Geotechnical	M.Sc. Engineering Geology and Geotechnics	35
Jinyela1 (Pty) Ltd	Rishaal Sahadew (<i>Pr.Tech.Eng.</i>)	Traffic / Transportation	Master's in Business Administration (MBA) ECSA Registration No. 201270347	25
SiVEST South Africa (Pty) Ltd	Gary Visser (<i>Pr.Eng.</i>)	Stormwater Management	BSc. (Eng) Civil ECSA Registration No. 960270	32

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4. ACTIVITY INFORMATION

4.1 Project Description

JDJ Properties (the Applicant) is proposing the expansion of the Tiffany's Shopping Centre located on Portion 158 in uMhlali, within the iLembe District, KwaZulu Natal Province. The proposed expansion will be located on the site adjacent to the shopping centre. In terms of the expansion, the following is proposed:

- New retail footprint;
- New parkade;
- New raised parking deck;
- New surface parking.

The above proposed additions will be located adjacent to the existing Tiffany's Shopping Centre and will be accessed via the existing access. The total site area is approximately 55 190 square metres (5.5ha); however, the development footprint is approximately 33 282 square metres (3.3ha). There will be approximately 315 parking bays on the surface, 4 levels of parking of 230 bays per level, and 30 staff bays in the basement.

No services will be included in the current application at this stage. The applicant requires that a development footprint to be approved.

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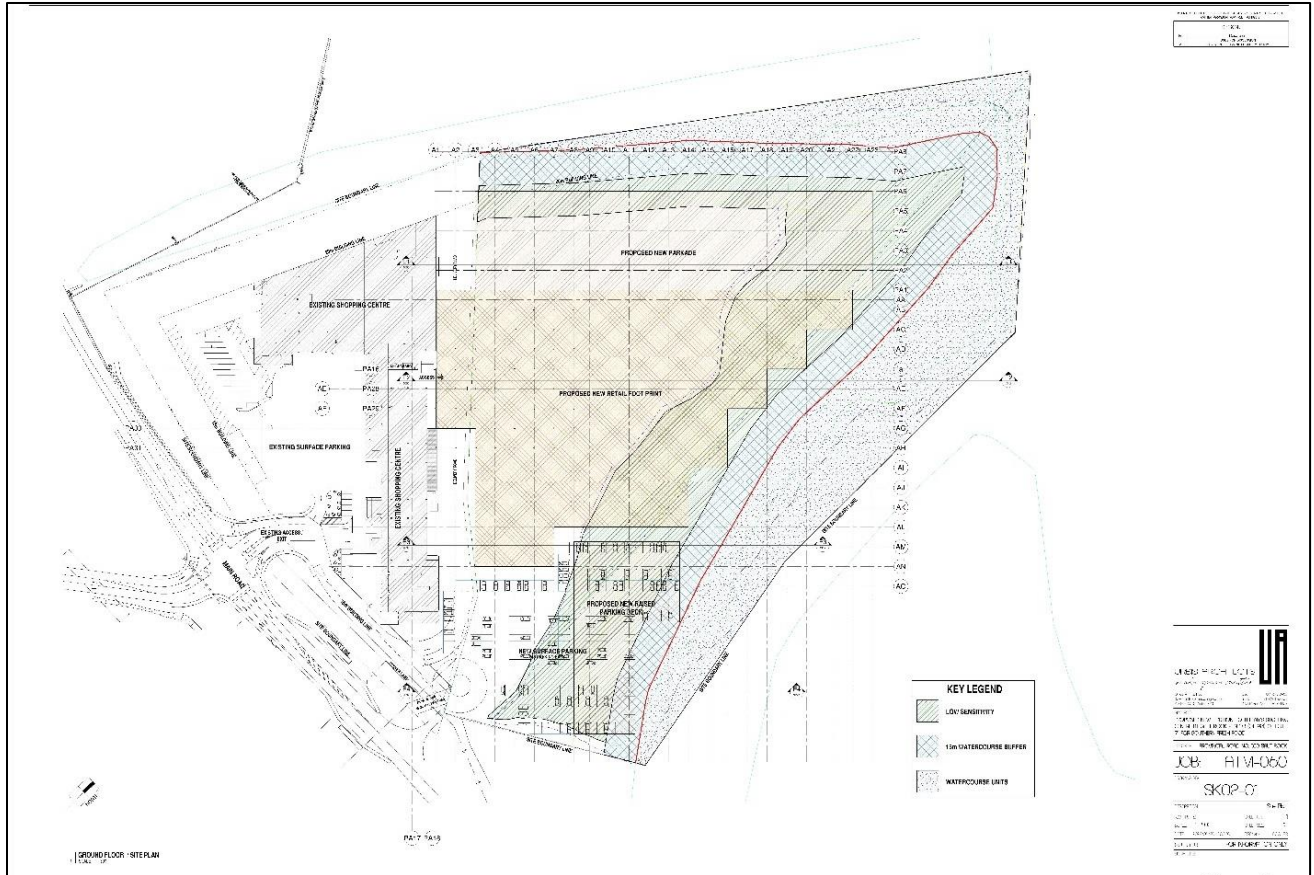


Figure 2: Proposed Development Layout Plan

4.2 NEMA Listed Activities

The amended EIA Regulations promulgated under Section 24(5) of the National Environmental Management Act, Act 107 of 1998 and published in Government Notice No. R. 326 list activities which may not commence without environmental authorization from the Competent Authority. The proposed activity is identified in terms of Government Notice No. R. 327 for activities which must follow the Basic Assessment Process. The project will trigger the following listed activities:

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Table 6: Listed activities in terms of NEMA: EIA Regulations 2014 (as amended in 2017), applicable to the proposed project

Activity No(s):	Relevant activities as set out in Listing Notices 1, 2 and 3 of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates.
Relevant Basic Assessment Activities as set out in Listing Notice 1		
19	<p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	<p>The construction of the shopping centre expansion will involve the infilling of more than 10 cubic metres into a watercourse as services may need to cross watercourses.</p>
27	<p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—</p> <p>(i) the undertaking of a linear activity; or</p> <p>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>	<p>More than 1 hectare of vegetation will be removed for the expansion of the shopping centre. The proposed development footprint is approximately 3.3ha.</p>
Relevant Basic Assessment Activities as set out in Listing Notice 3		
12	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>d. KwaZulu Natal</p> <p>iv. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such list, within an area that</p>	<p>More than 300m² of vegetation within the KwaZulu Natal Coastal Belt ecosystem (which is classified as Endangered), will be removed for the expansion of the shopping centre. It should be noted that as per the Terrestrial Ecological Assessment (Appendix E), the site has been historically transformed through</p>

Activity No(s):	Relevant activities as set out in Listing Notices 1, 2 and 3 of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates.
	has been identified as critically endangered in the National Spatial Biodiversity Assessment, 2004;	agricultural activities and is no longer representative of this vegetation type.

4.3 Site Locality

The Tiffany's site is located in the southwestern part of the iLembe District Municipality, approximately 5.8 km from the Dolphin's Coast. The study area is located in Salt Rock, north of Ballito and is adjacent to the N2.

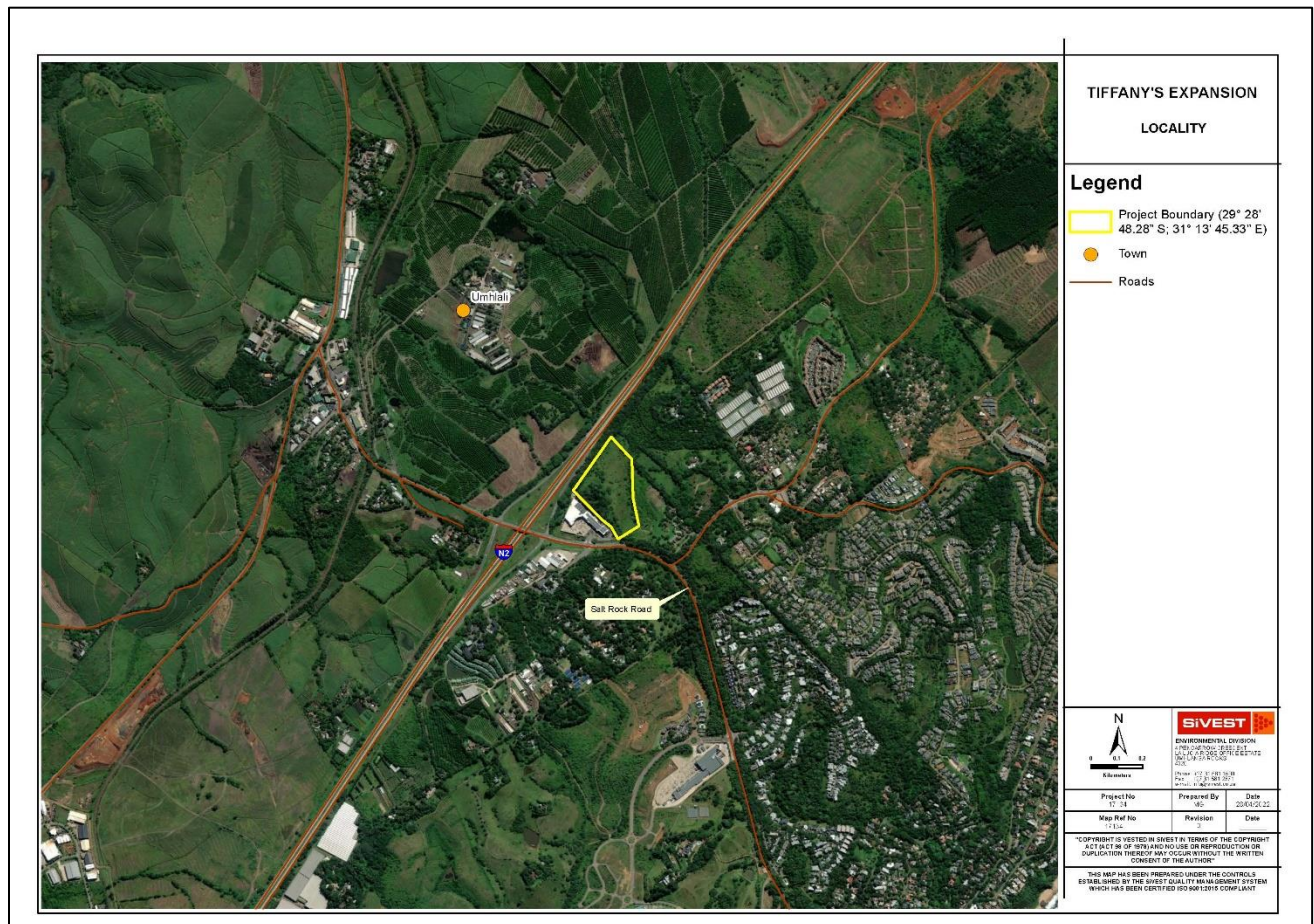


Figure 3: Site Locality

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4.3.1 21 Digit Surveyor General Code of the site and Property Description

The proposed expansion of the Tiffany's Shopping Centre is located on the following property:

Table 7: Property Description

21 Digit Surveyor General Code	Description	Portion	Farm/Erf No.	Farm Name
NOFU00000000152400158	Portion 158 of Erf 1524 Farm Lot 71	158	1524	Lot 71

4.3.2 Coordinates of the site

The coordinates for the site are as follows:

Latitude: 29° 28' 48.31" S

Longitude: 31° 13' 46.59" E

4.4 Site Description

Soils and Geology

The soils are suitable for the construction of fills, with the upper sand horizons appearing to be of better quality than the deeper clays. The site has been classified as C2 and collapse settlement of the upper soil horizons may occur when loaded and if wetted up. The ground conditions described refer specifically to those that were encountered at the test positions on the site. As such periodic geotechnical inspections of the site during construction must be undertaken to ensure that any variation in the anticipated ground conditions can be assessed and revised recommendations made to avoid unnecessary delays and expense. Furthermore, it is important that the construction phase of the project be treated as an augmentation of the geotechnical investigation.

Wetlands and Watercourse

The proposed development is predicted to result in moderately significant impacts to the local seep wetlands that are in a fair to moderately degraded ecological condition (PES Class C) and have a moderate EIS owing to the wetlands having intact swamp forest and hygrophilous grassland that is critically endangered. Under the poor mitigation scenario, four (4) impacts were assessed as being of moderate significance. With the effective and stringent implementation of the mitigation measures recommended by the specialist, three (3) of these impacts can be reduced to low to moderately-low significance whilst the significance of one of the operational phase impacts will remain as moderate under the good mitigation scenario due to the unavoidable alteration of the subsurface interflow zone that feeds Unit W01 and the encroachment into the buffer zone that negates opportunities to establish infiltration zones across the toe of the platform along the length of the wetland unit. Thus, a section of wetland is likely to experience measurably reduced water inputs and soil saturation rates. To further reduce the significance of this impact, it is recommended that the development be pulled back from the wetland edge and that a minimum 15m buffer be established that can be used as an engineered infiltration zone that can mimic the altered interflow zone. The residual moderate impact is not a fatal flaw but likely requires compensation depending on the predicted effectiveness of the engineered infiltration zone to mimic the altered interflow zone. Onsite wetland rehabilitation could be an option achieve compensatory gains in wetland ecosystem services and/or habitat.

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Terrestrial Ecology

The proposed development will result in a minor loss to biodiversity at a site level due to the high levels of transformation which historically occurred on site, however this loss can be largely mitigated against, provided the mitigation measures are implemented. Loss of indigenous species at a site level will occur resulting in a medium negative impact, however overall loss of biodiversity (particularly species of conservation concern) at a local level is expected to be at a minimum as no floral or faunal species of conservation concern were noted on site, therefore not affecting the greater area. The largest impact is expected to be the establishment of alien and invasive vegetation adjacent to developable areas, however the establishment of alien and invasive species can be mitigated against to result in a low overall impact. No fatal flaws have been identified and the Ecologist supports the proposed development provided the mitigation measures are implemented.

Cultural Environment

The desktop research indicated that there was a large farm complex on the top of the hill by 1937, and these buildings might predate 1900s. The complex appears to have been abandoned by the year 2012/2013. The field survey could not be undertaken adequately due to the dense vegetation around the buildings. The survey did note that there are old buildings on site, and these will need to be further assessed, as a permit for their destruction will be required. Any middens on the site, especially those older than 100 years, will also require a permit to damage/remove.

Traffic

Upon completion and finalisation of the design plans for the proposed expansion, a comprehensive Traffic Impact Assessment (TIA) will need to be undertaken by the Applicant. It is the traffic engineers opinion that there were no foreseeable problems with the proposed access control within development, in the inbound and outbound directions; there were no conceivable problems with regard to the internal circulation and the proposed aisles widths of the parking areas within the development. The parking bay dimensions, parking bay configuration and aisle widths that will be provided by the development are to the satisfaction of the traffic engineer. In the opinion of the traffic engineer, the proposed geometry on all aisles within the proposed development is acceptable. From a traffic perspective, the proposed development can be approved.

Stormwater Management

The Development Team, including the Contractor, shall be responsible for ensuring that the requirements of the Stormwater Management Plan (SWMP) are met. Similarly, the conditions as set out in the development's EMPr are to be adhered to and the SWMP should be read in conjunction with the EMPr. JDJ Properties (Applicant and landowner) shall be responsible for the ongoing performance of all stormwater control measures implemented on-site and the impact such works may have on downstream or neighbouring properties. The SWMP should be considered a "live" document and is subject to change as and when required.

The proposed development footprint overlain with the environmental sensitivity of the site is provided in the figure below.

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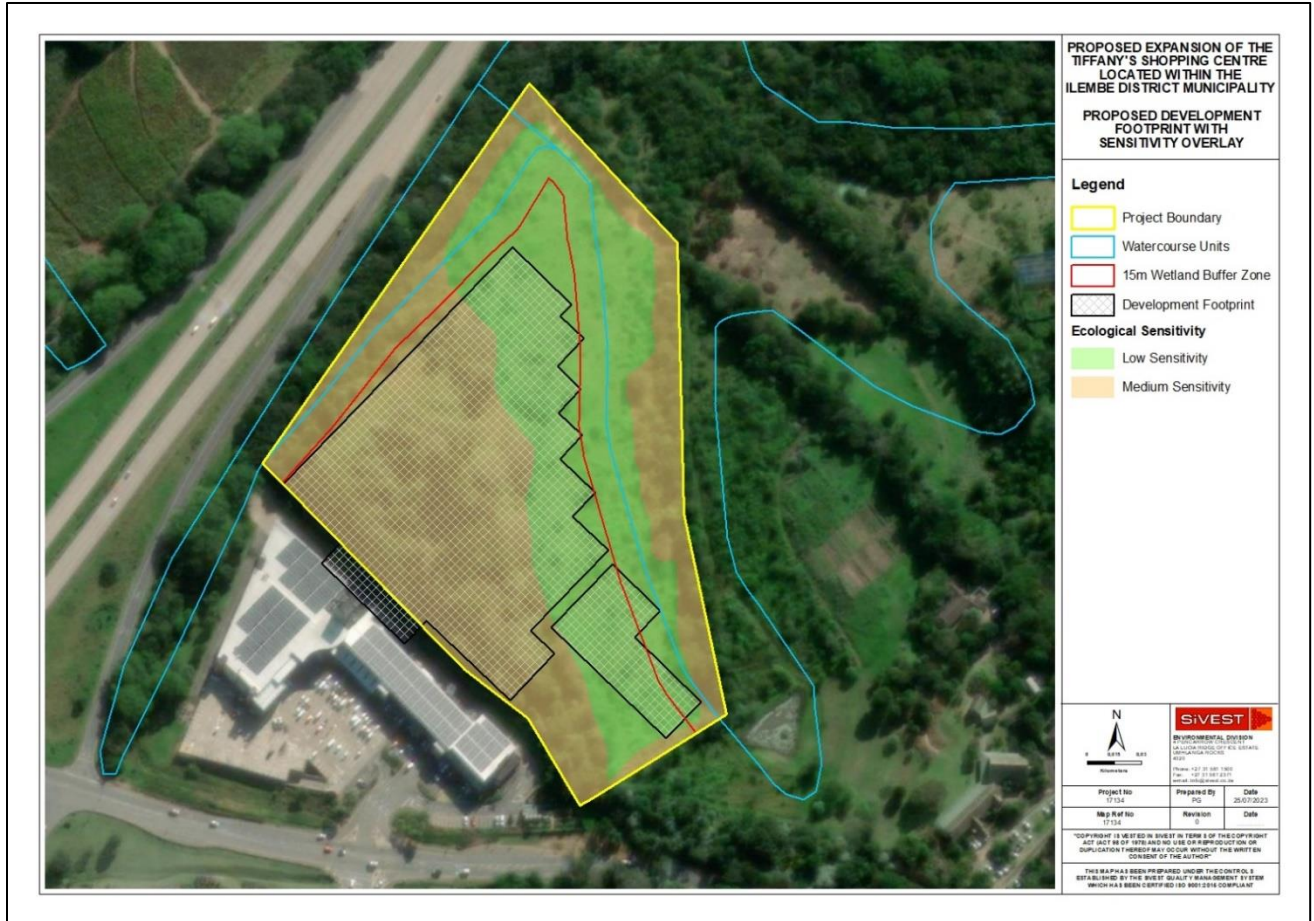


Figure 4: Proposed Development Footprint with Environmental Sensitivities Overlay

5. ENVIRONMENTAL MANAGEMENT PROGRAMME

5.1 Introduction

The Environmental Management Programme has been prepared in order to comply with the requirements as stipulated in the National Environmental Management Act (No. 107 of 1998).

This EMP includes:

- Details and expertise of the EAP who prepared the EMP including curriculum vitae;
- Project Description;
- Facility Illustration Plans;
- Mitigation measures as contained in the Impact Assessment Report;
- Recommendations and conclusions emanating from the specialist studies;
- Impact Management Objectives and Actions; and

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- A copy of the EA (if granted).

5.2 Aim and Objectives of the EMPr

The aim of the EMPr is to:

- Identify those construction activities identified for the proposed development that may have a negative impact on the environment;
- Outline the mitigation measures that will need to be taken and the steps necessary for their implementation;
- Describe the reporting system to be undertaken during construction.

The objectives of the EMP are to:

- Identify a range of mitigation measures which could reduce and mitigate the potential adverse impacts to minimal or insignificant levels.
- Provide a pro-active, feasible and practical working tool to enable the measurement and monitoring of environmental performance on site.
- Provide management structures that address the concerns and complaints of I&APs pertaining to the development.
- Ensure that the environmental specifications are identified, effective and contractually binding so as to enable compliance on site.

5.3 Layout of the EMPr

The Environmental Management Plan identifies the five phases of development as:

- Preconstruction Planning Phase Activities (Section 88.1)
- Construction Phase Activities (Section **Error! Reference source not found.**)
- Operational Phase Activities (Section **Error! Reference source not found.**)
- Compliance Monitoring (Section 9)

The generic and specific provisions are included together under each phase for each environmental consideration. The generic provisions are the general environmental issues, procedures and controls that can be applied to the project and site as a whole. The specific provisions are those environmental issues, procedures and controls that are relevant to a particular section of the site. It should be understood that the EMP is considered an evolving document and may be amended at any time by the relevant authorities (Department of Economic Development, Tourism and Environmental Affairs).

6. LEGAL AND OTHER REQUIREMENTS

6.1 Compliance with Applicable Laws

The supreme law of the land is “The Constitution of the Republic of South Africa”, which states: “*Every person shall have the right to an environment which is not detrimental to his or her health or wellbeing*”. Laws applicable

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to the protection of the environment in terms of Environmental Management (and relating to construction activities) include but are not restricted to:

- National Environmental Management Act No.107 of 1998
- Animals Protection Act, Act No. 71 of 1962
- Atmospheric Pollution Prevention Act, No. 45 of 1965
- Conservation of Agricultural Resources Act, No. 43 of 1983
- Environment Conservation Act, No. 73 of 1989
- Environmental Planning Act, Act No. 88 of 1967
- Forest Act, No. 122 of 1984
- Forest and Veld Conservation Act, Act No. 13 of 1941
- Hazardous Substances Act, No. 15 of 1973
- Land Survey Act, No. 9 of 1921
- Minerals Act, No. 50 of 1991
- National Environmental Management: Air Quality Act, Act No. 39 of 2004);
- National Environmental Management: Biodiversity Act, Act No. 10 of 2004, as amended)
- National Environmental Management: Waste Act, Act No. 59 of 2008
- National Environmental Management: Protected Areas Act (NEM: PAA) (Act No. 57 of 2003, as amended)
- NEMA EIA Regulations, 2014 (as amended)
- The National Heritage Resources Act of 1999
- National Water Act, Act No. 36 of 1998
- Occupational Health and Safety Act, Act No. 85 of 1993
- Provincial and Local Government Ordinances and Bylaws
- Soil Conservation Act, Act No. 76 of 1969
- Water Services Act, Act No. 108 of 1997
- National Dust Control Regulations (GN No. R. 827 of 1 November 2013
- National Road Traffic (Act No. 93 of 1996, as amended)

The EMPr forms part of the Contract Documentation and is thus a legally binding document. In terms of NEMA, an individual responsible for environmental damage must pay costs both to the environment and human health and the preventative measures to reduce or prevent additional pollution and/or environmental damage from occurring. This is referred to as the Polluter Pays Principle.

6.2 Compliance with the Environmental Management Programme

A copy of the EMPr must be kept on site during the construction period at all times. The EMPr will be made binding on all contractors operating on the site and will be included within the Contractual Clauses. Non-compliance with, or any deviation from, the conditions set out in this document constitutes a failure in compliance with the Environmental Authorisation issued by EDTEA.

It should be noted that in terms of Section 28 of the National Environmental Management Act (NEMA) Act No. 107 of 1998, those responsible for Environmental Damage must pay the repair costs both to the environment and human health and the preventative measures to reduce or prevent further pollution and/or environmental damage. (The polluter pays principle).

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In terms of the Environmental Authorisation (EA), non-compliance of the EA may result in invalidation of the EA, criminal prosecution or other actions provided for in the National Environmental Management Act (No. 107 of 1998) (as amended) and associated regulations. Any non-compliance must result in an immediate stop to works being issued. The contractor and developer will be held liable for any damage and consequent rehabilitation to environmentally sensitive areas outside the site boundary.

National government, provincial government, local authorities or committees appointed in terms of the conditions of the EA or any other public authority shall not be held responsible for any damages or losses suffered by the authorisation holder or successor in title in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance by the authorisation holder with the conditions of authorisation as set out in this document or any subsequent document emanating from these conditions of authorisation.

The Developer is deemed not to have complied with the EMPr if:

- If environmental damage ensues due to negligence;
- They fail to respond adequately to complaints from the public.

The Contractor is deemed not to have complied with the EMPr if:

- If environmental damage ensues due to negligence;
- The contractor fails to comply with corrective or other instructions issued by the Principal Agent within a specified time,
- The Contractor fails to respond adequately to complaints from the public.

6.3 Specific Conditions Pertaining to Authorisations

Should the KwaZulu Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA) issue an Environmental Authorisation (EA), this EMPr will be updated to include any additional pre-construction, operation and decommissioning conditions stipulated in the EA not included below.

A water use license will be applied for and may become applicable to the proposed project at a later stage.

Specific conditions pertaining to regulatory processes, or Licensee / Holder of the Authorisation requirements, have not been included within the EMPr and will only be included on finalization of the EMPr (pending decision). These conditions are to be undertaken by the Licensee / Holder of the Authorisation prior to the commencement of construction.

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7. PROJECT RESPONSIBILITIES

The table below provides a summary of the responsible parties and the auditing process to be carried out.

Table 8: Responsible Parties and Auditing Process

Title	Party	Role During Construction	Role During Operation
Project Developer (Proponent)	JDJ Properties	Assume ultimate responsibility	Assume ultimate responsibility
Project Manager	To be appointed by proponent	Project management	N/A
Contractor's Project Manager	Balance of Plant Contractor	Construction management	N/A
Main Contractor/s	There will be multiple contracts placed for the construction phase. These will cover civil earthworks and concrete, structural mechanical and electrical / instrumentation. There could also be the construction camp management contract. These may be managed by the Contractor's Project Manager (or other).	Main Contractor will undertake day to day construction activities covering aspects such as civil earthworks and concrete, structural mechanical and electrical / instrumentation.	N/A
Environmental Officer	To be appointed by Main Contractors if required.	Day to day environmental responsibility, point of contact for ECO	N/A
Environmental Control Officer	To be appointed by Project developer	Monthly audits	Annual audits
Competent Authority	KwaZulu Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA)	Conduct site visits when necessary.	Conduct site visits when necessary

The above may be updated based on the outcome of the Environmental process should additional responsibilities be identified.

8. IMPACT MANAGEMENT ACTIONS AND OUTCOMES

8.1 Pre-Construction Phase

8.1.1 Pre-Construction Activities

This section deals with the issues relative to the pre-construction activities during the pre-construction phase.

Table 9: Pre-construction Activities

ASPECT / IMPACT	IMPACT MAANGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Permits / Licenses / Approvals	<ul style="list-style-type: none"> The EMPr must be approved by the competent authority (CA) (EDTEA) prior to commencement of construction. A written notice must be given to the competent authority prior to the commencement of construction. The notice must include site preparation activities as well as a date on which it is anticipated that the activity will commence. The notice must cite the EDTEA application reference number. A copy of the EA must be kept by the authorisation holder and made available to any official of the CA on request. The development layout must comply with the Layout Plan, as approved in the EA. Should the layout have changed, the updated layout must be submitted to the CA and approved prior to construction. Impacting on water resources will require a Water Use Licence from the Department of Water and Sanitation (DWS) before construction commences; 	Applicant/ECO	Adhere to impact management actions	<p>Avoid construction delays.</p> <p>Ensure the EMPr is adhered to, and all necessary approvals and permits are in place.</p> <p>Prevent impacts to water resources.</p> <p>Prevent impacts to fauna and flora.</p>	Prior to commencement of construction
Appointment of ECO	<ul style="list-style-type: none"> Appoint an Environmental Control Officer. 	Holder of the EA	Undertake regular audits	Avoid construction delays.	Continuous

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ASPECT / IMPACT	IMPACT MAANGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Site demarcation	<ul style="list-style-type: none"> Before construction begins, all areas to be developed must be clearly demarcated with fencing or orange construction barrier where applicable. All Construction Camps are to be fenced off in such a manner that unlawful entry is prevented, and access is controlled. All access points to the Construction Camp should be controlled by a guard or otherwise monitored, to prevent unlawful access. Records of all environmental incidents (in line with Section 30 of NEMA, 1998) must be maintained and a copy of these records be made available to provincial department on request throughout the project execution. 	Contractor	Undertake regular audits	<p>Prevent unauthorized impact on the environment.</p> <p>Ensure safety of the workers, public and prevent loss/ damage to equipment. Ensure the conditions of the EA are adhered to.</p> <p>Compliance to all legislative requirements.</p>	Continuous
Site clearing	<ul style="list-style-type: none"> Site clearing must take place in a phased manner, as and when required. Areas which are not to be constructed on within two months must not be cleared to reduce erosion risks. The area to be cleared must be clearly demarcated and this footprint strictly maintained. Spoil that is removed from the site must be removed to an approved spoil site or a licensed landfill site. The necessary silt fences and erosion control measures must be implemented in areas where these risks are more prevalent. 	Holder of the EA/Contractor	Undertake regular audits	<p>Site establishment undertaken responsibly.</p> <p>Sensitive areas identified and avoided.</p> <p>Implementation of erosion management</p>	Once off
Establishment of site / construction camp	<ul style="list-style-type: none"> Site establishment shall take place in an orderly manner and all required amenities shall be installed at camp sites before the main workforce move onto site. 	Developer/ Service Providers, Contractors, Engineers	Adhere to impact management actions	Minimise disturbance to the environment.	During site establishment

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ASPECT / IMPACT	IMPACT MAANGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<ul style="list-style-type: none"> • All construction equipment must be stored within the construction camp. • All associated oil changes etc. (no servicing) must take place within the camp over a sealed surface such as a concrete slab. • An area for the storage of hazardous materials must be established that conforms to the relevant safety requirements and that provides for spillage prevention and containment. • The construction camp must be provided with portable fire extinguishing equipment, in accordance with all relevant legislation and must be readily accessible. • The Contractor must provide sufficient ablution facilities, in the form of portable / VIP toilets, at the Construction Camp, and shall conform to all relevant health and safety standards and codes. No pit latrines, French drain systems or soak away systems shall be allowed and toilets may not be situated within 100 meters of any surface water body or 1:100-year flood line. A sufficient number of toilets shall be provided to accommodate the number of personnel working in the area. • The Contractor shall inform all site staff to make use of supplied ablution facilities and under no circumstances shall indiscriminate sanitary activities be allowed. • No fires will be allowed and the Contractor must make alternative arrangements for heating. LP Gas may be used, provided that all required safety measures are in place. The Contractor shall take specific measures to 				

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ASPECT / IMPACT	IMPACT MAANGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	prevent the spread of fires, caused by activities at the campsites. These measures may include appropriate instruction of employees about fire risks and the construction of firebreaks around the site perimeter.				
Training of site staff	<ul style="list-style-type: none"> • Environmental awareness training for construction staff, concerning at a minimum the general environmental awareness, conservation of fauna and flora, the prevention of accidental spillage of hazardous chemicals and oil; pollution of water resources (both surface and groundwater), air pollution and litter control and identification of archaeological artefacts. • Staff operating equipment (such as loaders, etc.) shall be adequately trained and sensitised to any potential hazards associated with their tasks. • No operator shall be permitted to operate critical items of mechanical equipment without having been trained by the Contractor and certified competent by the Project Manager. • Staff should be educated as to the need to refrain from indiscriminate waste disposal and/or pollution of local soil and water resources and receive the necessary safety training. • Staff must be trained in the hazards and required precautionary measures for dealing with these substances. • Spillage packs must be available at construction areas. 	Contractor	Undertake regular audits	<p>All staff members are aware of the EMPr requirements relevant to them.</p> <p>All waste managed according to approved the Method Statement compiled by the contractor and approved by the engineer and reviewed by ECO.</p>	Continuous

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8.1.2 Consultation

This section deals with the issues relative to the consultation during the pre-construction phase.

Table 10: Consultation

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Consultation	<ul style="list-style-type: none"> Provide a mechanism through which information could be exchanged between the project proponent and stakeholders. Identify relevant stakeholders and engage them at applicable stages of the process. Inform the public about the proposed construction process. Surrounding communities must be kept informed, through the identified and agreed consultation channels, of the commencement of construction. Work on site to be restricted to work hours. 	Holder of the EA/ Contractor	Clear communication channels established.	Continuous	Consultation

8.1.3 Terrestrial Ecology

The section deals with the issues relative to terrestrial ecology during the pre-construction phase.

Table 11: Terrestrial Ecology

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Open Space	<ul style="list-style-type: none"> Green engineering solutions should include native tree species already growing on site in parking bays and eating areas. Rehabilitation of the north east portion of site which will not be cleared during construction and operation should be in line with a rehabilitation and alien and invasive management plan. As far as possible, this area should be rehabilitated to a climax state. 	Holder of EA	Adhere to impact management actions	Minimisation of loss of remainin open space to reduce species and habitat loss	Prior to construction phase

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8.1.4 Wetlands

This section deals with the issues relative to wetlands during the pre-construction phase.

Table 12: Wetlands

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Wetlands on site	<p>A formal and detailed wetland rehabilitation plan must be developed for the project. This plan should include but not be limited to the following measures:</p> <ul style="list-style-type: none"> All foreign material deposited / placed within the wetland must be removed and the original wetland surface re-exposed and reshaped. Engineered control structures and interventions should be designed by a suitably experienced rehabilitation engineer in conjunction with a wetland ecologist. The objectives of these structures should be to maximise the extent and retention times of the wetland. An invasive alien plant control plan must form part of the rehabilitation plan. Re-vegetation should be via active planting of desirable obligate wetland plants as sods and plugs to suite the desired wetland hydroperiod. A formal and detailed wetland management plan must be developed for the project. An annual budget must be allocated to the management of the wetland in perpetuity. 	Holder of EA	Adhere to impact management actions	Minimise impacts to wetlands on site	Pre-construction phase
Wetlands on site	Method statements for all work within wetlands must be compiled.	Contractor / Holder of EA	Adhere to impact management actions		Pre-construction / construction

8.1.5 Heritage

This section deals with the issues relative to heritage during the pre-construction phase.

Table 13: Heritage

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
The remaining buildings, ruins and/or middens located within the site	<ul style="list-style-type: none"> A site assessment, especially where the farm complex was located must be undertaken by an accredited built environment specialist and an archeologist subsequent to vegetation clearance. A permit application to KZNARI (provincial heritage resource authority) must be lodged for the destruction / demolishing of the buildings. 	Holder of EA	Adhere to impact management actions	Protection of heritage resources.	Prior to construction phase

8.1.6 Transportation

This section deals with the issues relative to transportation during the pre-construction phase.

Table 14: Transportation

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Transportation	<ul style="list-style-type: none"> A comprehensive Traffic Impact Assessment (TIA) must be undertaken upon completion of and finalization of the design plans for the expansion 	Holder of EA	Adhere to impact management actions	To resolve any challenges / development constraints pertaining to the access intersection, internal circulation and parking.	Prior to construction phase – upon finalisation of design plans.

8.2 Construction Phase

8.2.1 Construction Camp

This section deals with the issues relative to the construction camp during the construction phase.

Table 15: Construction Camp

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
Construction Camp: Storage of materials (including hazardous materials)	<ul style="list-style-type: none"> Choice of location for equipment lay-down and storage areas must take into account prevailing winds, distances to adjacent land uses, general onsite topography and water erosion potential of the soil. Impervious surfaces must be provided where necessary. Storage areas must be designated, demarcated and fenced if necessary. Storage areas should be secure so as to minimize the risk of crime. They should also be safe from access by unauthorised persons i.e. children / animals etc. Fire prevention facilities must be present at all storage facilities. Hazardous storage and refuelling areas must be bunded prior to their use on site during the construction period. The bund wall must be high enough to contain at least 110% of any stored volume. The surface of the bunded surface should be graded to the centre so that spillage may be collected and satisfactorily disposed of. These storage facilities (including any tanks) must be on an impermeable surface that is protected from the ingress of storm water from surrounding areas in order to ensure that accidental spillage does not pollute local soil or water resources. Material Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible the available, MSDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases or escapes. Staff dealing with these materials / substances must be aware of their potential impacts and follow the appropriate safety measures. The contractor 	Contractor, Holder of EA	<p>Adhere to impact management actions,</p> <p>Choice of storage areas must be carefully considered to avoid impact to environment.</p> <p>Correct handling, storage and/or disposal and/or cleanup of all materials to prevent impact to environment.</p>	Once off

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
	<p>must ensure that its staff is made aware of the health risks associated with any hazardous substances used and has been provided with the appropriate protective clothing/equipment in case of spillages or accidents and have received the necessary training.</p> <ul style="list-style-type: none"> • Drip trays should be utilised at all dispensing areas. • All fuel storage areas must be roofed to avoid creation of dirty stormwater. • Storage areas containing chemical substances / materials must be clearly sign posted. • An approved waste disposal contractor must be employed to remove and recycle waste oil, if practical. The contractor must ensure that its staff is made aware of the health risks associated with any hazardous substances used and has been provided with the appropriate protective clothing/equipment in case of spillages or accidents and have received the necessary training. • All excess cement and concrete mixes are to be contained on the construction site prior to disposal off site. • All major spills as specified in the contractor emergency response procedure of any materials, chemicals, fuels or other potentially hazardous or pollutant substances must be cleaned immediately and the cause of the spill investigated. Preventative measures must be identified and submitted to the MC and ECO for information. Emergency response procedures to be followed and implemented. 			
Construction camp: Workers Conduct	<ul style="list-style-type: none"> • A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules: • No alcohol / drugs to be present on site. • Prevent excessive noise. • Construction staff are to make use of the facilities provided for them, as opposed to ad-hoc alternatives (e.g. fires for cooking). • No fires to be permitted on site. • Trespassing on private / commercial properties adjoining the site is forbidden. • Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitised to any potential hazards associated with their tasks. 	Contractor	Ensure general well-being of the site staff, affected and surrounding environment.	At all times during construction

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
	<ul style="list-style-type: none"> No operator shall be permitted to operate critical items of mechanical equipment without having been trained by the Contractor and certified competent by the Project Management. 			
Construction Camp: Maintenance of access and haulage roads	<ul style="list-style-type: none"> Vehicles and plant tyres must be washed prior to leaving respective construction areas, and prohibited from transporting excess mud onto tar roads. Movement of construction vehicles potentially impacting on urban infrastructure must be mitigated through the use of appropriate warning signs, and not entering or leaving the site during peak traffic hours. Contractors should ensure that access roads are maintained in good condition by attending to potholes, corrugations and stormwater damages as soon as these develop. Unnecessary compaction of soils by heavy vehicles must be avoided. Construction vehicles must be restricted to demarcated access, haulage routes and turning areas. Machine / vehicle operators should receive clear instructions to remain within demarcated access routes. Movement of heavy-duty vehicles and vehicles not connected with work in progress must be restricted to the construction zone in order to control related impacts such as compaction of soil, damage to vegetation and noise pollution. 	Contractor	<p>Prevent unauthorized access to site.</p> <p>Ensure that construction plant and vehicles do not impact negatively upon the environment.</p> <p>Ensure that access and haulage roads are maintained in a satisfactory manner.</p>	Continuous
Stockpile Management	<ul style="list-style-type: none"> Stockpiling of soil or any other materials used during the construction phase must not be allowed on or near slopes, near a watercourse or water body. This is to prevent pollution or the impediment of surface runoff. Dust emissions from soil stockpiles can occur during the loading of piles, when wind disturbs the stockpile surface, and during reclamation. Stockpiles must be covered with hessian sheets or alternatively enclosed with a shade cloth windbreak. Both of these techniques aim to reduce wind speed at the surface of the stockpile, in turn reducing the potential for dust scour and entrainment. The applicant must establish additional suitable mitigation measures to prevent the erosion of stockpiles. Stockpiles must not exceed 2 m in height. 	Contractor	Prevent pollution and erosion.	Continuous

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
Air/dust pollution	<ul style="list-style-type: none"> Vehicles travelling back and forth from the construction site must adhere to speed limits so as to avoid generating excessive dust. A speed limit of 30 km/hour must be adhered to on site on all un-surfaced roads. The dampening down of access surfaces must be practiced especially in dry and windy conditions to prevent excessive dust formation. The Contractor needs to ensure that the fence-line consisting of the wooden poles/supports and shade-cloth structure is maintained in good condition to act as a screen to minimize dust pollution. Vehicles and machinery are to be kept in good working order and should excessive emissions be noted; the Contractor is to have equipment serviced as soon as possible. No fires are to be permitted on site except for the burning of firebreaks. 	Contractor	<p>Compliance to all legislative requirements.</p> <p>Prevent air and dust pollution.</p>	Continuous
Noise pollution	<ul style="list-style-type: none"> Blasting, piling or other 'noisy' activities must take place during normal working hours. The adjacent land owners must be notified prior to any planned activities that will be unusually noisy. These activities could include, but are not limited to, blasting and piling. Should complaints regarding noise levels be received, as a result of construction activities on the site, these must be attended to and recorded in the environmental file. 	Contractor	<p>Compliance to all legislative requirements.</p> <p>Prevent noise pollution</p>	Continuous
Handling of general and hazardous substances and material	<ul style="list-style-type: none"> Handling, storage and disposal of excess or containers of potentially hazardous materials shall be in accordance with the requirements of current Regulations and Acts in force. Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded area as soon after detection as possible to minimize pollution risk and reduced bunding capacity. Contaminated water storage facilities shall not be allowed to overflow and appropriate protection from rain and flooding shall be implemented. Every precaution must be taken to ensure that any chemicals or hazardous substances do not contaminate the soil or groundwater on site. For this purpose, the Contractor must: <ul style="list-style-type: none"> Ensure that potentially harmful materials are properly stored in a dry, secure environment, with concrete or sealed flooring. 	Contractor	Ensure that soil and groundwater pollution is avoided or efficiently managed.	Continuous

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
	<ul style="list-style-type: none"> ○ The Contractor must ensure that materials storage facilities are cleaned/maintained on a regular basis, and that leaking containers are disposed of in a manner that allows no spillage onto the bare soil or surface water. The management of such storage facilities and means of securing them shall be agreed. ○ Control the use and storage of fuels and chemicals that could potentially leach into the ground. Adequate spillage containment measures shall be implemented, such as cut off drains, etc ○ Any petrochemical spill must be stored in skips and taken to a hazardous landfill site. Safe disposal certificates must be included in the environmental file ○ Fuel and oil storage tanks and drums, including internal installations and waste oil tanks, must be situated on an impermeable base within an oil-tight bund. ○ Any oils, fuels and spilled substance must be removed weekly and recycled or disposed of at a licensed waste disposal facility able to accommodate such waste. Proof of waste disposal must be kept in the environmental file. ○ Ensure that the mixing /decanting of all chemicals and hazardous materials should take place on a tray or impermeable surface. ○ Chemical/hazardous waste generated during mixing/decanting should then be disposed of at a registered landfill site. ○ Municipal water or another source approved by the Engineer should be used for all activities such as washing or equipment or disposal of any type of waste, dust suppression, concrete mixing and compacting. <ul style="list-style-type: none"> ● In the event of a spillage/incident that cannot be contained, and which poses a potential threat to the local environment, the following Departments must be informed of the incident within 48 hours and in accordance with Section 30 of the National Environmental Management Act, Act 107 of 1998: <ul style="list-style-type: none"> ○ The Local Authority, KwaDukuza Local Municipality; ○ Department of Water and Sanitation (DWS) 			

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
	<ul style="list-style-type: none"> ○ Department of Economic Development, Tourism and Environmental Affairs (Pollution and Waste Component, iLembe District) ○ The local Fire Department; and ○ Any other mandated authority. <ul style="list-style-type: none"> • Should there be any soil and groundwater contamination, the Control Environmental Officer: Pollution and Waste Component must be informed within five (05) working days. • In the event of this occurring, the necessary clean up measures must be undertaken immediately. • Any soil/groundwater contaminated during construction must be removed, stored in sealed container and disposed thereof at a licensed facility. Proof of safe disposal must be kept in the environmental file. • Appoint appropriate contractors to remove any residue from spillages from site. • Ensure that used oils/lubricants are not disposed of on/near the site, but at a permitted landfill and that contractors purchasing these materials understand the liability under which they must operate. The ECO will be responsible for reporting the storage/use of any other potentially harmful materials to the relevant authority. • All necessary equipment for dealing with spills of fuel / chemicals must be available at the site. • Spills must be cleaned up immediately and contaminated soil /material disposed of appropriately at a registered site. 			

8.2.2 Consultation

This section deals with the issues relative to the consultation during the construction phase.

Table 16: Consultation

IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES / FREQUENCY
Social impact to the adjacent landowners	<ul style="list-style-type: none"> The regular and ongoing communication between the ECO, Contractor, Engineer and the IAPs is important for the duration of the contract and would have been started during the Site Establishment/pre-Construction Phase. The Engineer and Contractor are responsible for on-going communication with the IAPs. A Complaint's register must be kept at the site office. This must be in a duplicate format, with numbered pages. The IAPs need to be made aware of the register and the methods of communication available to them. The Contractor needs to appoint a staff member(s) to act as liaison officer for formal consultation with I &AP's in order to handle questions and explain the construction process and what it will entail. This register is to be tabled during monthly site meetings. Any queries or complaints that arise need to be handled by following a set protocol. 	At all times during construction.	Contractor Engineer	Ensure that adjacent residents are not negatively affected.

8.2.3 Environmental Education and Training

This section deals with the issues relative to environmental education and training during the construction phase.

Table 17: Environmental Education and Training

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
Environmental Education and Training: Environmental Training	<ul style="list-style-type: none"> • Ensure that all site personnel have a basic level of environmental awareness training. The Contractor must submit a proposal for this training to the ECO for approval. Translators are to be used where necessary. Topics covered should include: <ul style="list-style-type: none"> ○ What is meant by “Environment” ○ Why the environment needs to be protected and conserved ○ How construction activities can impact on the environment ○ What can be done to mitigate against such impacts ○ Awareness of emergency and spills response provisions ○ Social responsibility during construction e.g. being considerate to local residents • It is the Contractor’s responsibility to provide the site foreman with no less than 1 hour’s environmental training and to ensure that the foreman has sufficient understanding to pass this information onto the construction staff. • Training should be provided to the staff members in the use of the appropriate fire-fighting equipment. • Use should be made of environmental awareness posters on site. • The need for a “clean site” policy also needs to be explained to the workers. • Staff operating equipment (such as loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their tasks. 	Contractor	Thorough induction to site.	Continuous
Environmental Education and Training: Monitoring of environmental training	<ul style="list-style-type: none"> • The Contractor must monitor the performance of construction workers to ensure that the points relayed during their introduction have been properly understood and are being followed. If necessary, the ECO and / or a translator should be called to the site to further explain aspects of environmental or social behaviour that are unclear. Toolbox talks are recommended. 	Contractor	Thorough induction to site.	Continuous

8.2.4 Waste Management

This section deals with the issues relative to waste management during the construction phase.

Table 18: Waste Management

IMPACT/ ASPECT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMNT OUTCOMES	TIMEFRAMES/ FREQUENCY
Waste Management: Litter management/ general waste	<ul style="list-style-type: none"> • Refuse bins and skips must be placed at strategic positions to ensure that litter does not accumulate within the construction site. • The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at registered/licensed landfill. • If possible and feasible, all waste generated on site must be separated into glass, plastic, paper, metal and wood and recycled. An independent contractor can be appointed to conduct this recycling. • Where vegetation is cleared and is suitable, chipping and/or mulching can be considered. • Littering by the employees of the Contractor shall not be allowed under any circumstances. • Skip waste containers should be maintained on site. These should be kept covered and arrangements made for them to be collected regularly. • Any putrescible waste must be stored in containers that can keep out scavengers such as monkeys and birds to prevent the spread of litter. • All waste must be removed from the site and transported to a landfill site promptly to ensure that it does not attract vermin or produce odours. • Waste needs to be collected and disposed of at a registered municipal site during and after construction, and written agreement should be provided to the KZN Department of Water and Sanitation. • The Contractor shall provide a method statement with regard to waste management. • A certificate of disposal shall be obtained by the Contractor and kept on file, if relevant. • Under no circumstances may solid waste be burnt on site. • All waste must be removed promptly to ensure that it does not attract vermin or produce odours. 	<p>Contractor</p> <p>The EO shall monitor the neatness of the work sites as well as the Contractor campsite.</p>	<p>All waste managed according to approved Method Statement</p>	<p>Continuous</p>

IMPACT/ ASPECT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMNT OUTCOMES	TIMEFRAMES/ FREQUENCY
	<ul style="list-style-type: none"> • Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site. Waybills for all such disposals are to be kept by the Contractor for review by the Engineer/ECO. This is required for all waste disposed of. • The excavation and use of rubbish pits on site is forbidden. • The burning of waste is forbidden. 			
Waste Management: Hazardous waste	<ul style="list-style-type: none"> • All waste hazardous materials, if present, must be carefully and appropriately stored, and then disposed of off-site at a licensed landfill site, where practical. • Contaminants to be stored safely to avoid spillage. • Machinery must be properly maintained to keep oil leaks in check. • All necessary precaution measures shall be taken to prevent soil or surface water pollution from hazardous materials used during construction and any spills shall immediately be cleaned up and all affected areas rehabilitated. 	Contractor	All waste managed according to approved Method Statement	Continuous
Waste Management: Sanitation	<ul style="list-style-type: none"> • Chemical ablution facilities must be cleaned regularly, with associated waste disposed of at a registered site. Proof of chemical toilet cleaning and waste disposal must be kept in the environmental file. • A registered chemical waste company is to be used to remove waste from the chemical toilets on site. • Contractors must ensure that no spillage occurs when chemical toilets are cleaned and that the contents are properly stored and removed off-site. • Staff shall be sensitised to the fact that they should use these facilities at all times. No indiscriminate sanitary activities on site shall be allowed. Under no circumstances may open areas, neighbours fences or the surrounding bush be used as a toilet facility. • Ablution facilities shall be within proximity from workplaces and not closer than 100m from any natural water bodies. There should be enough toilets available to accommodate the workforce (minimum requirement 1: 15 workers). Male and females must be accommodated separately where possible. • Weekly servicing of the chemical toilets on site needs to be practiced by the supplier and service records are to be submitted to the ECO on a monthly basis. Toilets on site need to be kept in a clean and hygienic state. 	Contractor	<p>Staff members aware of EMPr requirements and ablutions used and maintained accordingly.</p> <p>Prevents pollution / ground contamination</p>	Continuous

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IMPACT/ ASPECT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	IMPACT MANAGEMNT OUTCOMES	TIMEFRAMES/ FREQUENCY
Waste Management: Remedial Actions	<ul style="list-style-type: none"> In the event of an accidental spill or leakage of hazardous substances, such incident(s) must be reported to all relevant authorities, in accordance with section 30(5) of the NEMA, 1998 pertaining to the control of incidents. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site. Excavation of contaminated soil must involve careful removal of soil using appropriate tools/machinery to storage containers until treated or disposed of at a licensed hazardous landfill site. The precise method of treatment for polluted soil must be identified by a suitable specialist. This could involve the application of soil absorbent materials as well as oil-digestive powders to the contaminated soil. If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent material. If necessary, oil absorbent sheets or pads must be attached to leaky machinery or infrastructure. Materials used for the remediation of petrochemical spills must be used according to product specifications and guidance for use. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment and stored in adequate containers until appropriate disposal. 	Contractor	All waste managed according to approved Method Statement	Continuous

8.2.5 Geotechnical

This section deals with the issues relative to the geotechnical landscape during the construction phase.

Table 19: Geotechnical

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Soil Types and their suitability as fill material	<ul style="list-style-type: none"> An assessment of the required volumes be carried out prior to the commencement of the earthworks so that a suitable quantity of sand can be stockpiled for later use. 	Contractor	Adhere to impact management actions	Prevention of impacts pertaining to geotechnical landscape	During construction phase

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<ul style="list-style-type: none"> Preserve the topsoil - at least the upper 200 mm of topsoil should be removed and stockpiled and thereafter used to rehabilitate the site after construction is complete. 				
Cut and Fill and Slopes	<ul style="list-style-type: none"> Any slopes greater than 2m in height will need to be analyzed in terms of their global stability and discussed with the geotechnical engineer prior to construction. In the alluvial areas the slopes may need to be battered back at shallower angles due to the very loose nature of these sands. Alternatively retaining structures may be required to support these materials. During embankment and fill construction, the fills should be placed in layers not exceeding 200 mm loose thickness, and compacted to a minimum of 93% Modified AASHTO dry density. Any boulders or material larger than two-thirds of the layer thickness must not be included in the fill material. Where fills are to support structural foundations, the material should be compacted to 95% Modified AASHTO dry density. Should excessively high fills be envisaged, then an assessment of their stability should be undertaken to ensure long-term stability. It is recommended that a more comprehensive laboratory testing programme be put in place to ascertain more fully the engineering properties of the in-situ materials available. 	Contractor	Adhere to impact management actions	Prevention of impacts pertaining to geotechnical landscape	During construction phase
Site drainage	<ul style="list-style-type: none"> The site should be well graded to permit water to readily drain from the site, and to prevent ponding of water anywhere on the surface. All terraces and earthworks in general should be graded to prevent ponding and ingress of water into the subsurface soils. The need for subsurface soil drainage will have to be assessed on site during development although significant groundwater flows are not expected. 	Contractor	Adhere to impact management actions	Prevention of ponding of water on site.	During construction phase

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<ul style="list-style-type: none"> There may be some seepage in the valley invert and some kind of drainage solution may be required to prevent saturation of the lower fill horizons in this area. Should groundwater be encountered, subsoil drains should be installed and these are designed according to the filter criteria of the in-situ soils to prevent piping. The design of subsoil drains should be discussed in detail with the geotechnical engineer. 				
Foundation Requirements	<ul style="list-style-type: none"> Multi-storey buildings will need to be supported on piled foundations unless the buildings are founded in deep cuts or box cuts, about 4 m below ground level and in places possibly deeper. A detailed pile design should be carried out by an experienced geotechnical engineer taking all loads into account. Integrity testing should be carried out on all piles installed to confirm pile shaft uniformity. 	Contractor	Adhere to impact management actions	Building / structural support	During construction phase

8.2.6 Terrestrial Ecology

This section deals with the issues relative to the terrestrial ecology during the construction phase.

Table 20: Terrestrial Ecology

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Transformation of habitat for flora	<ul style="list-style-type: none"> Footprint of the layout needs to be a strictly adhered to. Where possible, indigenous vegetation needs to be retained. Clearance for construction should be done in a phased approach, and rehabilitation should be done as soon as work has ceased adjacent to the expansion. Where possible, construction should occur in the dry season to prevent soil loss through stormwater. 	Contractor / Holder of EA	Adhere to impact management actions	Minimise disturbance and or transformation of habitat for flora.	Continuous during construction phase

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<ul style="list-style-type: none"> Where possible, manual clearance of the vegetation should be done so as to prevent the unnecessary movement of machinery in no-go areas. No-go areas must be demarcated and retained for the whole construction period and must include the northeast portion of site as per the layout. The contractor should implement an alien invasive control programme, particularly in areas where soil disturbance occurs. Soil stockpiles need to be grassed with an indigenous mix or covered with shadecloth to prevent soil loss through wind and water erosion. Strictly no trapping or hunting of fauna is allowed. All open excavations need to be checked on a daily basis and any fauna that may be stranded will have to be caught and released by a qualified person. Strictly no littering. The contractor should highlight this at daily toolbox talks and site clean-ups should occur on a daily occasion. 				
Erosion related impacts	<ul style="list-style-type: none"> All stormwater outflows must be protected with renomattresses and gabion baskets to reduce the effect of erosion. Rainwater harvesting of stormwater is encouraged, and where possible, reused for toilet flushing and irrigation. Where possible, indigenous vegetation needs to be retained. Vegetation should be cleared only when construction occurs in that section of the construction. Soil stockpiles need to be grassed with an indigenous mix or covered with shadecloth to prevent soil loss through wind and water erosion. Progressive rehabilitation must be implemented, where areas must be rehabilitated once construction is complete. Construction activities should be limited to the winter months to prevent loss of soil to water runoff. 	Contractor / Holder of EA	Adhere to impact management actions	Minise erosion related impacts	Continuous during construction phase

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<ul style="list-style-type: none"> Spraying of the soil surface should occur when working in dusty conditions. 				
Habitat transformation and fragmentation for fauna	<ul style="list-style-type: none"> Construction footprint needs to be a strictly adhered to. Areas outside of the construction zone must be demarcated as “no-go” areas as per the layout. Where possible, indigenous vegetation needs to be retained. Manual clearance of alien and invasive vegetation should be done so as to prevent the unnecessary movement of machinery in no-go areas. An alien and invasive control programme should implemented, particularly in areas where soil disturbance has occurred. Soil stockpiles need to be returned to the excavations, with the subsoil being placed first, followed by the topsoil. Monthly ECO auditing should occur during rehabilitation of the site. Once rehabilitation is complete, one three month, and one six month follow up audit should be conducted to assess the state of rehabilitation. 	Contractor / Holder of EA	Adhere to impact management actions		Continuous during construction phase

8.2.7 Wetlands

This section deals with the issues relative to the wetlands during the construction phase.

Table 21: Wetlands

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Demarcation of no-go areas and construction corridors	<ul style="list-style-type: none"> The no-go area for the construction phase is the final approved wetland buffer zone in line with the approved SDP (i.e 15m). All areas within the buffer zone must be considered no-go areas. 	Contractor / Holder of EA	Adhere to impact management actions	Reduce impact of construction activities on onsite wetlands.	During site set up / Continuous during construction phase

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<ul style="list-style-type: none"> • Prior to the commencement of any construction activities, the 15m wetland buffer zone must be staked out by a surveyor and demarcated using brightly coloured shade cloth. • Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project. • The demarcation work must be signed off by the Environmental Control Officer (ECO) before any work commences. • The demarcations are to remain until construction and rehabilitation is complete. 				
Runoff, erosion and sediment control	<ul style="list-style-type: none"> • Wherever possible, existing vegetation cover on the development site should be maintained during the construction phase. The unnecessary removal of groundcover from slopes must be prevented, especially on steep slopes which will not be developed. • Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected, clearing activities should be put on hold. In this regard, the contractor must be aware of weather forecasts. • Sediment barriers (e.g.: silt fences/sandbags/hay bales) must be installed immediately downstream of active work areas (including soil stockpiles) as necessary to trap any excessive sediments generated during construction. • All bare slopes and surfaces to be exposed to the elements during clearing and earthworks must be protected against erosion using rows of hay-bales, sandbags and/or silt fences aligned along the contours and spaced at regular intervals (e.g. every 2m) to break the energy of surface flows. • Once shaped, all exposed/bare surfaces and embankments must be re-vegetated immediately. • If re-vegetation of exposed surfaces cannot be established immediately due to phasing issues, temporary erosion and 	Contractor / Holder of EA	Adhere to impact management actions	Reduce impacts pertaining to runoff, erosion and sedimentation	During site set up / Continuous during construction phase

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<p>sediment control measures must be maintained until such a time that re-vegetation can commence.</p> <ul style="list-style-type: none"> All temporary erosion and sediment control measures must be monitored for the duration of the construction phase and repaired immediately when damaged. All temporary erosion and sediment control structures must only be removed once vegetation cover has successfully recolonised the affected areas. After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled-in with appropriate material and silt fences or fascine work must be established along the gully for additional protection until vegetation has re-colonised the rehabilitated area. Regular maintenance of any sediment control dams must be undertaken during the construction / establishment period to ensure that these structures continue to function appropriately. 				
Invasive Alien Plant Control	<ul style="list-style-type: none"> All temporary erosion and sediment control measures must be monitored for the duration of the construction phase and repaired immediately when damaged. All temporary erosion and sediment control structures must only be removed once vegetation cover has successfully recolonised the affected areas. After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled-in with appropriate material and silt fences or fascine work must be established along the gully for additional protection until vegetation has re-colonised the rehabilitated area. Regular maintenance of any sediment control dams must be undertaken during the construction / establishment period to ensure that these structures continue to function appropriately. 	Contractor	Adhere to impact management actions	Control the spread of alien invasive plants	Continuous during construction phase

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Prohibitions related to animals	<ul style="list-style-type: none"> • The handling and/or killing of any animal species present is strictly prohibited and all staff/personnel must be notified of such incidents. • Wetland fauna (e.g. snakes, frogs, small mammals) that are encountered during the construction phase must be relocated to other parts of the wetland under the guidance of the EO or ECO. • Poaching/snaring is strictly prohibited. 	Contractor	Adhere to impact management actions	Prevent any injury to animals	Continuous during construction phase
General rehabilitation guidelines	<ul style="list-style-type: none"> • All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated immediately to the satisfaction of the ECO. • All land impacted by the proposed development must be rehabilitated by undertaking the following general tasks: <ul style="list-style-type: none"> ○ All foreign material must be removed from site. ○ Land must be regraded / re-shaped and topsoils must be reinstated. ○ Compacted soils must be adequately ripped/loosened where compacted, as informed by the ECO. ○ Re-vegetation should take place as follows: <ul style="list-style-type: none"> ▪ For any permanently and seasonally saturated areas - via active planting of sods and plugs as advised a wetland ecologist. ▪ For temporary and dryland areas - via hydroseeding using an appropriate indigenous seed mix as advised by a qualified ecologist. 	Contractor / Holder of EA	Adhere to impact management actions	Rehabilitation of land impacted by construction activities	Continuous during construction phase

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8.2.8 Heritage / Palaeontology

This section deals with the issues relative to the heritage / paleontological aspects during the construction phase.

Table 22: Heritage / Palaeontology

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Potential destruction to palaeontological / archaeological material such as fossils during earthworks	If any fossils or other paleontological / archaeological material are found during earthworks, the Chance Find Protocol which is included in Appendix E of the EMPr must be implemented.	Contractor / Holder of EA	Adhere to impact management actions	Minimise damage to paleontological / archaeological material	During construction phase

8.2.9 Stormwater

This section deals with the issues relative to the stormwater control during the construction phase.

Table 23: Stormwater

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Management of stormwater runoff	<p>The control measures set out herein are not to be considered all-encompassing as the contractor will also have to adapt his control measures to the varying onsite conditions. All stormwater must be controlled and the following points act as guideline requirements that the Contractor is to take note of during the construction phase:</p> <ul style="list-style-type: none"> The soils encountered on site are highly erodible and thus adequate controls to reduce stormwater runoff velocities and potential erosion damage are to be implemented and kept in place throughout the construction phase and the contractor must ensure that all control measures are continually maintained in good effective working order. 	Contractor / Holder of EA	Adhere to impact management actions	Management of stormwater runoff	Continuous during construction phase

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<ul style="list-style-type: none"> • The contractor is to install all downslope sandbagging and other controls (i.e. silt fencing, strip sodding, earth deflection berms, etc) required before earthworks are commenced. • All areas that incur damage during rainstorms are to be rehabilitated as soon as the area in question has dried out sufficiently to allow work to take place (within 24 hours). All remedial fill is to be adequately benched into the existing soil mass and compacted to 95% Mod AASHTO. • All stormwater temporarily channelled off the site must be directed in such a manner as not to cause damage to common/neighbouring grounds and must have controls in place to trap any sediment from getting into the major stormwater system. Where applicable, this can be achieved by forcing runoff through a succession of silt catches e.g. Silt fences. • The permanent stormwater control reticulation should be installed as early as possible in the construction phase. All precautions must be taken to ensure sediment/runoff does not end up in common ground, neighbouring properties, streams, or wetlands. • It is essential that all completed embankments and large open areas are top soiled and planted with vegetation as soon as practical on completion. In this instance, the banks are to beshaped as required and then handed over to the landscape contractor to carry out the planting. • It is recommended that full coverage of sods staked to the relevant embankments is implemented. • The contractor is to take note of vulnerable points after all precipitation events and must reinforce the stormwater control measures in these areas if necessary. • Stormwater must not be allowed to pond near building foundations. 				

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ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
	<ul style="list-style-type: none"> At the end of each working day, the access route onto the site must be protected by sandbagging, to prevent the flow of stormwater and silt onto or off the site. All contractors shall ensure that no materials, fluids, or substances are allowed to enter the stormwater system that could have a detrimental effect on the flora, fauna and aquatic life in the watercourses and neighbouring sites. The temporary stormwater control measures must evolve as conditions on-site evolve. 				

8.2.10 Post construction Activities

This section deals with the issues relative to the post construction activities during the construction phase.

Table 24: Post Construction Activities

ASPECT / IMPACT	IMPACT MANAGEMENT ACTION	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	TIMEFRAME/ FREQUENCY
Removal of the construction camp	<ul style="list-style-type: none"> All structures comprising the construction camp are to be removed from site. The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc, and these should be cleaned up. All hardened surfaces within the construction camp area should be ripped, all imported materials removed, and the area shall be top-soiled and re-vegetated if appropriate. The Contractor must arrange the cancellation of all temporary services. 	Contractor	Ensure that disturbed areas are returned to its natural state post-construction.	Following completion of construction
Waste Disposal	<ul style="list-style-type: none"> The developer and contractor must ensure that no construction material foreign to the site, including construction debris, is left unattended after construction activities have ceased/completed. All construction materials including rubble, cement bags, chemicals, fuels and oils must be safely stored in appropriate containers and disposed of at a license waste facility in accordance with the approved EMPr. 	Contractor	Ensure that no waste remains on site following the completion of construction.	

ASPECT / IMPACT	IMPACT MANAGEMENT ACTION	RESPONSIBILITY	IMPACT MANAGEMENT OUTCOME	TIMEFRAME/ FREQUENCY
	<ul style="list-style-type: none"> No remaining rubble is to be buried on site. The site is to be free of litter and surfaces are to be checked for waste products from activities such as concreting or asphaltting and cleared in a manner approved by the Project Engineer. 			

8.3 Operational Phase

8.3.1 Terrestrial Ecology

This section deals with issues relative to the terrestrial ecology during the operational phase.

Table 25: Terrestrial Ecology

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
Erosion related impacts for operation phase	<ul style="list-style-type: none"> All stormwater outflows must be protected with renomattresses and gabion baskets to reduce the effect of erosion on the access road. Where possible, indigenous vegetation needs to be returned as soon as construction ceases. Soil stockpiles need to be grassed with an indigenous mix and rehabilitated to prevent soil loss through wind and water erosion before operation phase begins. Rehabilitation should take place as soon as construction is complete. Operation phase should only begin once the ECO has deemed rehabilitation successful and mitigation measures have been implemented. A six monthly check of the area should take place for the emergence erosion gulley's, and if gulley's emerge, will need to be rehabilitated immediately. 	Holder of EA	Adhere to impact management actions	Minimise impacts related to erosion during the operational phase	Continuous during construction phase

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
Biodiversity loss due to operation phase	<ul style="list-style-type: none"> A post construction monitoring programme to ensure that rehabilitation efforts are successful and that edge effects are reduced. Monthly monitoring of these sensitive areas should take place during the first year after construction to ensure that rehabilitation is successful. Six monthly checks of the area should take place for the emergence of invader species. 	Holder of EA	Adhere to impact management actions	Minimise impacts related to the loss of biodiversity during the operational phase	Continuous during construction phase

8.3.2 Wetlands

This section deals with issues relative to wetlands during the operational phase.

Table 26: Wetlands

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY/ TIMEFRAMES
Maintenance and Management of wetlands	<ul style="list-style-type: none"> It is important that the location and extent of the wetlands in the vicinity of project activities be incorporated into all formal maintenance and repair plans for the project. Alien invasive plant control must be practiced on an ongoing basis in line with the requirements of Section 2(2) and Section 3 (2) the National Environmental Management: Biodiversity Act (NEM:BA), which obligates the landowner/developer to control IAPs on their property. 	Holder of EA	Adhere to impact management actions	Maintenance and wetlands located on site. Control of Alien Invasive Plant Species	During the operational phase of development

8.3.3 Stormwater

This section deals with the issues relative to stormwater control during the operational phase.

Table 27: Stormwater

ASPECT / IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOME	FREQUENCY / TIMEFRAMES
Operation and maintenance of stormwater infrastructure	<ul style="list-style-type: none"> The stormwater management system is to be designed to operate automatically without human intervention. Routine maintenance comprising cleaning of blocked pipes and inlets and repair of any localised erosion damage will, however, be required. The infrastructural services will be handed over to JDJ Properties who will ultimately be responsible for operation and maintenance thereof. They are to be made aware of any design and operational requirements via the issue of “as-built” or “for record” drawings and operational manuals if applicable. 	Holder of EA	Adhere to impact management actions	Management of stormwater	Continuous during operational phase

9. COMPLIANCE MONITORING

The developer will undertake to appoint an Environmental Control Officer (ECO) to monitor the performance of the contractor and developer in ensuring that the conditions and measures within the EMPr are adhered to.

9.1 Construction Phase

- The Site Manager must monitor the Construction Phase of the project to ensure compliance with the EMPr.
- The ECO must undertake the auditing of the Construction Phase and must audit the activities twice a month and will conduct a final close out audit once the construction activities have ceased onsite and the construction camp cleared. The final close out audit/post construction environmental audit must be submitted to the Department within 60 days from the date that the construction is complete.
- The ECO in conjunction with the Site Manager must keep a record of the checking of compliance with the EMPr.
- This EMPr will be included in the contract documentation of all contractors who will work on the site.

9.2 Wetland Monitoring during Construction Phase

A photographic record of the state of the onsite wetlands prior to the commencement of clearing/construction must be kept for reference and rehabilitation monitoring purposes. The ECO must undertake bi-monthly compliance monitoring audits. Freshwater ecosystem aspects that must be monitored related to monitoring freshwater ecosystem impacts include:

- The condition of the demarcation fence.
- Evidence of any no-go area incursions.
- The condition of the temporary runoff, erosion and sediment control measures and evidence of any failures.
- Evidence of sedimentary deposits / plumes and elevated rates of sedimentation (i.e. vegetation smothering / burial).
- Evidence of elevated river / stream turbidity levels.
- Evidence of gully or bed/bank erosion.
- Visual assessment of stormwater quality and instream water quality.
- The condition of waste bins and the presence of litter within the working area.
- Evidence of solid waste within the no-go areas.
- Evidence of hazardous materials spills and soil contamination.
- Presence of alien invasive and weedy vegetation within the working area.
- Rehabilitation and re-vegetation methods and success.

Once the construction and rehabilitation has been completed, the ECO should conduct a close out site audit 1 month after the completion of rehabilitation.

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9.3 Wetland Monitoring Post Construction Phase

It will be important that long-term monitoring of the potential freshwater ecosystem impacts be undertaken to proactively to identify any environmental issues and impacts that may arise as a result of the operational phase of the project. The following key aspects should be monitored:

- Rehabilitation monitoring - structure stability and effectiveness;
- Erosion and/or sedimentation in the onsite and downstream wetlands;
- Presence of alien invasive plants; and
- Water quality and evidence of pollution.

10. AMENDMENTS TO THE EMPR

The Environmental Control Officer (ECO) has the right to request (in writing) a method statement to be compiled by the contractor in cases where the Construction EMPr may not adequately address the issue or nature of the activity/site warrants the need thereof. The method statement must be approved in writing by the ECO prior to carrying out the activity.

Any major issues not covered in the EMPr as submitted as well as any layout changes, will be addressed as an addendum to the EMPr and must be submitted for approval prior to implementation.

Authorised officials of the Department reserve the right to review the approved EMPr during the construction and operational phases of the above-mentioned activity and amend/add any condition as it is deemed necessary. Authorised officials also reserve the right to inspect the project during both construction and operational phase of development.

11. ENVIRONMENTAL AWARENESS PLAN

Appendix 4 of GN R326 EIA Regulations 2014 (as amended) requires that and Environmental Awareness Plan describes the manner in which *“the applicant intends to inform his or her employees of any environmental risk which may result from their work; and risks must be dealt with in order to avoid pollution or the degradation of the environment”*. In recognition of the need to protect our environment, environmental management should not only be seen as a legal obligation but also as a moral obligation.

This Environmental Awareness Plan is intended to create the required awareness and culture with personnel and contractor’s / service providers on environmental safety and health issues associated with the development activities.

11.1 Policy on Environmental Awareness

This Environmental Awareness Plan must serve as the basis for the induction of all new employees (as well as contractors depending on the nature of their work on site) on matters as described herein and read in conjunction with the EMPr. The Plan will also be used to hone awareness of all employees on a continuous basis.

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Specific environmental awareness performance criteria will also form part of the job descriptions of employees, to ensure diligence and full responsibility at all levels of the organizational work force.

11.2 Implementation of Environmental Awareness

General environmental awareness will be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout the project's duration. This will ensure that environmental accidents are minimized and environmental compliance maximized.

Environmental awareness will be fostered in the following manner:

- Induction course for all workers on site, before commencing work on site;
- Refresher courses as and when required;
- Daily toolbox talks with all workers on the site at the start of each day, where workers can be alerted to particular environmental concerns associated with their tasks for that day or the area/habitat in which they are working; and
- Displaying of information posters and other environmental awareness material at the general assembly points.

11.3 Training and awareness

The main contractor is to take responsibility for the management of their staff and subcontractors on the project site during the construction phase and supervise them closely at all times. The onus is on the contractor to make sure that all their staff and subcontractors fully comprehend the contents of the EMPr. The contractor must organize environmental awareness training programmes, which should be targeted at the two levels of employee: management and labour.

11.4 Training of construction workers

All construction staff must receive basic training in environmental awareness, including the storage and handling of hazardous substances, minimization of disturbance to sensitive areas, management of waste, and prevention of water pollution. They must be informed of how to recognize historical / archaeological artefacts that may be uncovered. They must also be apprised of the EMPr's requirements. Environmental awareness training programmes need to be formulated for these employee levels and must comprise:

- A record of all names, positions and duties of staff to be trained;
- A framework for the training programmes;
- A summarised version of the training course(s); and
- An agenda for the delivery of the training courses.

Such programmes will set out the training requirements, which need to be conducted prior to any construction works occurring and will include:

- Acceptable behaviour with regard to flora and fauna;
- Management and minimising of waste, including waste separation;

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- Maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, lubricants, cement, mortar and other chemicals;
- Responsible handling of chemicals and spills;
- Environmental emergency procedures and incident reporting; and
- General code of conduct towards I&APs.

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Appendix A: CV's of SiVEST Personnel

CURRICULUM VITAE

Michelle Nevette

Name	Michelle Nevette
Profession	Environmentalist
Name of Firm	SiVEST SA (Pty) Ltd
Present Appointment	Divisional Manager: SiVEST Environmental Division
Years with Firm	21 Years
Date of Birth	18 March 1975
Nationality	South African



Professional Qualifications

- BA (Economics), Honours in Environmental Management
- MEnvMgt. (Environmental Management) - University of South Africa
- ISO 14001:2015 Introduction and Implementation of an EMS (03/2018)
- Cert.Nat.Sci. reg. No. 120356 (July 2020)

Membership to Professional Societies

- International Association for Impact Assessment South Africa (IAIAsa)
- Environmental Assessment Practitioners Association of South Africa (EAPSA) Reg No.2019/1560
- South African Council for Natural Scientific Professions (SACNASP) Cert. Sci.Nat. Reg No. 120356

Employment Record

Aug 2009 – to date	SiVEST SA (Pty) Ltd Environmental Division: Divisional Manager
April. 1999 – Aug 2009	SiVEST Environmental Division: Senior Environmental Project Manager

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Fluent	Fluent	Fluent
Afrikaans	Good	Good	Good

Years of Working Experience: 21 years

Countries of Working Experience

- South Africa
- Zimbabwe

Fields of Specialisation

- Environmental Project Management
- Environmental Impact Assessment
- Environmental Management and Auditing
- Environmental Planning including ISO14001:2015

CURRICULUM VITAE

Michelle Nevette

Overview

Michelle's strong managerial skills have been extensively used in setting up and running projects and in establishing and monitoring documentation systems. Responsible for the management of a team of environmental impact assessment practitioners, including financial management of the division in conjunction with the Managing Director, and ongoing responsibilities on various environmental projects.

Michelle has a keen interest in strategic planning and has been responsible for undertaking Strategic Environmental Assessments and for preparing Integrated Environmental Management Programs and Environmental Management Frameworks for various municipalities and private developers. Extensive experience in following the Basic Assessment and Environmental Impact procedure, as well as in preparing Environmental Management Plans, consulting with authorities and conducting Audits.

Expertise gained in a variety of environmental issues relating to municipal planning, mixed use development, agro-industrial developments, business parks, petrol filling stations, the housing sector, and infrastructural projects.

Projects Experience (by Sector)

ENVIRONMENTAL PLANNING /STRATEGIC PROJECTS

- Appointed by the Cato Ridge Logistical Hub Consortium (Pty) Ltd for the Cato Ridge Pilot Intermodal Project in Cato Ridge, KwaZulu-Natal (planning, BA/EIA and WULA).
- Appointed by Royal Shaka Estate (Pty) Ltd to project manage and obtain the necessary town planning and environmental rights the proposed 2155ha Royal Shaka Estate, North Coast.
- Port of Richards Bay – Strategic Environmental Assessment for Transnet National Ports Authority, (Aug 2018 – May 2019).
- Appointed by SMEC, on behalf of KZN COGTA, to undertake a High-level Environmental Status Quo & Recommendations Report for the Strategic Corridor Plan – Strategic Infrastructure Projects 2: Durban – Free State – Gauteng Development Region (June 2014 – present).
- Appointed by Finningley to assist with finalising the EIA and post authorisation work (including bulk servicing to the site on a mixed-use development) which included provision for an Autobody Supply Park.
- Advised Toyota SA on the EIA requirement for a proposed site for a Toyota Autobody
- Preparation of a Strategic Environmental Assessment (SEA) for the Airports Company South Africa (ACSA) for a portion of property known as the Eastern Precinct.
- Appointed by ACSA to undertake an EIA for a portion of property known as the Eastern Precinct to house an automotive park.
- Appointed by Crookes Brothers Limited to prepare an EMF and subsequently an EIA for two properties comprising 1800ha in extent.
- Appointed by the KwaDukuza Municipality to undertake an SEA for KwaDukuza.
- Appointed by the uThungulu District Municipality to prepare an Integrated Environmental Management Plan (IEMP) for the district

Pre-feasibility Studies/Screening

- Appointed by Process Projects to undertake an environmental screening of Site Selection for Lithium-ION NMC Precursor Materials Production (IDC project).
- Edgewood New Teaching and Learning Building. University of KwaZulu Natal. Desktop Environmental Screening Assessment and Mapping.
- Izotsha Hub Development, Izotsha. LDM. Desktop Environmental Prefeasibility Assessment and Mapping.
- Cato Ridge Development Project. SMEC. Desktop Biophysical Prefeasibility Assessment.
- Hammarsdale Link Road Project. SMEC. Desktop Environmental Screening Assessment.
- Msinga Cwaka New Town Centre – Appointed by LDM Consulting to undertake an Environmental Pre-feasibility Study for the Cwaka New Town Centre in Msinga Municipality, KwaZulu-Natal (Dec 2014).
- Avondale Forest Estate – Appointed by Trencon to undertake an Environmental Pre-feasibility Study for the Residential Eco-Estate adjacent Zimbali in Ballito, KwaZulu-Natal (Sep 2014).

CURRICULUM VITAE

Michelle Nevette

Climate Change

- Durban Climate Change Strategy – Appointed by eThekweni Municipality Environmental Planning and Climate Protection Department to establish a city status quo and recommendations to facilitate the implementation of climate change work within the city (May – Sep 2018).

Natural Resource Management (Environmental Rehabilitation)

- Renishaw Estate – Appointed by the Department of Environmental Affairs: Natural Resource Management Directorate to undertake the rehabilitation of the 1,833ha Mpambanyoni Conservation Development and Renishaw Estate (a mixed-use estate development with a strong conservation ethic) near Scottburgh, South Coast, KwaZulu-Natal (Dec 2017 – present).

POLICY & LEGISLATION

Review of Section 22 ECA Applications

- Appointed by DEAT to review and assess the pending Environmental Impact Assessment Applications for KZN submitted in terms of Section 22 of Environmental Conservation Act, Act 73 OF 1989.

Alien Vegetation

- Appointed to develop an auditing framework and to audit the eThekweni Municipality Production and Display Nurseries to determine their compliance with the Conservation of Agriculture Resources Act, 1983 (ACT No. 43 OF 1983) (CARA)

Coastal Zone Management

- Environmental Impact of the Alleged Illegal Cottages along the Wild Coast (former Transkei)

Telecommunication Policy for Urban Areas in KwaZulu-Natal

- Prepared on behalf of the Town and Regional Planning Commission. This policy involved extensive stakeholder consultation and included extensive research on the impact of telecommunication towers and associated infrastructure in urban areas. Assisted in the collection and preparation of data.

Training

- Appointed by uThungulu District Municipality to prepare training manuals and operational procedures manuals on EIA's which provided guidelines and principles for the District and Local Municipalities.

Advisory Services

- Appointed by Oxygen to provide environmental advisory services and assistance to municipal projects that have become 'stuck' on behalf of KZN PROV TREASURY for MUNICIPAL INFRASTRUCTURE

BUSINESS/INDUSTRY PROJECTS

- Audit of AMR to review their waste management practice and EMPr on behalf of Hillside Aluminium South 32
- ISO14001:2015 Internal Audit of Hillside Aluminium South 32
- ISO14001: 2015 Compilation of Legal Compliance Register and Aspects and Impacts Register for Technipaint (Pty) Ltd
- Appointed by Richards Bay Minerals (RBM) to conduct a performance assessment of RBM's approved EMPr and compile a legal liability report
- Permit/license external compliance audit for Bayside Aluminium
- Permit/license external compliance audit for Hillside Aluminium
- Permit/license external compliance audit for Metalloys Manganese Smelter in Meyerton

CURRICULUM VITAE

Michelle Nevette

Ports/Marine Infrastructure:

- Basic Assessment Report and EMP for the construction of marine infrastructure required for a floating dry dock in the Port of Richards Bay (Operation Phakisa)
- Preparation of a Sustainability Report and Environmental/Community Interface Report for new CO1 Conveyor for Transet Capital Project as FEL3 phase of Project Life Cycle process.

Petrol Filling Stations:

- Appointed by Engen Petroleum Limited to undertake BAs for the following Service Stations: Engen Ottawa, Engen Tongaat and Engen Galleira
- Appointed by Engen Petroleum Limited to undertake EIAs for the following Service Stations: Engen Umhlali; Engen Riverhorse 1; Engen Riverhorse 2; Engen CBD Downs and Engen Stapleton,;
- Appointed by Shell SA Marketing (PTY) Ltd to undertake EIAs for a petrol filling station, convenience stores and ATM at Mkuze, Phoenix and Hans Dettman.
- Appointed by Shell SA Marketing (Pty) Ltd to undertake the scoping process for a petrol filling station, convenience stores and ATM at Chatsworth, Marionhill, Verulam, Hannaford, Northcroft, Eastbury and Brookdale within Durban.
- Appointed by Shell SA Marketing (Pty) Ltd to undertake application for Exemptions for the upgrade of existing petrol filling stations at Bayhead and Gateway, Durban.
- Appointed by Caltex Oil South Africa (Pty) Ltd to prepare a Scoping Report and EMP for a petrol filling station, convenience stores and ATM at Brackenham, Richards Bay
- Preparation of Scoping Report and EMP for Philani Valley Petrol Station and Commercial Centre
- Preparation of Scoping Report and EMP for Umlazi Valley Petrol Station and Commercial Centre

Crude storage:

- Preparation for the Airports Company South Africa (ACSA) of an EIA for a proposed subdivision and rezoning of a portion of their property for future use by NATCOS (crude storage facility).

Mixed use/Business Park/Logistics/Shopping Centre:

- Appointed by the Cato Ridge Logistisc Hub Consortium (Pty) Ltd for the Cato Ridge Pilot Intermodal Project in Cato Ridge, KwaZulu-Natal (planning, BA/EIA and WULA).
- Preparation of an EIA for a mixed use development at Renishaw
- Appointed by Finningley to assist with finalising the EIA and post authorisation work (including bulks servicing to the site on a mixed use development) which included provision for an autosupply park.
- Advised Toyota SA on the EIA requirement for a proposed site for a Toyota Autobody
- Appointed by Barkomotive (Pty) Ltd, a wholly-owned subsidiary of Ellingham Estate (Pty) Ltd, to undertake an EIA Report for the proposed mixed-use Rorqual Estate Development near Park Rynie, South Coast, KwaZulu-Natal (October 2012).
- Appointed by the Passenger Rail Association of South Africa for the construction of an Intersite. Precinct in Scottburgh, located on the KwaZulu-Natal South Coast.
- Preparation of Duty of Care, Basic Assessment and EMP for Shoprite Distribution Center in Canelands.
- Preparation of a Basic Assessment for Sakhisizwe Holdings (Pty) Ltd for the proposed Warwick Mall as part of the 2010 World Cup Initiatives.
- Preparation of a Basic Assessment Prime Spot Trading 9 (Pty) Limited for the proposed Sithole Mall Shopping Centre in Osizweni
- Basic Assessment Report for a warehouse in Alton, Richards Bay, Briardale Trading
- Basic Assessment Report and EMP for a convenience centre in Gingindlovu
- Basic Assessment Report for the Amangwane Shopping Centre in Ulundi
- Preparation of an EIA for the Airports Company South Africa (ACSA) for a proposed Business Park on a portion of property known as the Eastern Precinct to house an automotive park.
- Preparation of an application for exemption for the Airports Company South Africa (ACSA) to lease a portion of their property to Shoprite-Checkers

CURRICULUM VITAE

Michelle Nevette

Waste License Applications

- Appointed by Richards Bay Minerals to undertake the waste license application for the salvage yard and ZN4.
- Appointed by Richards Bay Coal Terminal to undertake the waste license application for their existing operations.

COMMUNITY UPLIFTMENT PROJECTS

- Appointed by Renishaw Property Development (Pty) Ltd for the construction of a school containing sporting facilities, parking areas and engineering services in Scottburgh.
- Appointed by Industrial Development Corporation (IDC) to undertake an EIA Report for the proposed Nonoti Beach Tourism Development near Blythedale, North Coast, KwaZulu-Nata
- Basic Assessment Report and EMP for the uMhlathuze Multi-Purpose Sport Stadium in Richards Bay, uThungulu District Municipality
- Appointed by the Department of Works to prepare a Scoping Report and EMP for the rezoning of an “open space” area in Port Shepstone to “public administration”
- Appointed by the Department of Works to prepare an Application for Exemption for a police station and community hall in Khenani, Richards Bay.

RESIDENTIAL PROJECTS

Low-Cost Housing

- Greater Amaoti Housing Project – Appointed by the Department of Human Settlements to undertake the EIA process for the development of 20 000 housing units in Amaoti. eThekweni Municipality.
- Shayamoya Phase 3 Housing Development – Appointed by the Greater Kokstad Local Municipality to undertake the EIA process for the housing development.
- Appointed by Oxygen Infrastructure Solutions for development of the Marianridge Housing Development in Marianridge, KwaZulu-Natal.
- Appointed by eThekweni to undertake an EIA for Madimeni, Lower Langefontein and Molweni Low Cost Housing.
- Appointed by eThekweni to undertake an EIA for Trenance Park 2B and Redcliffe Low Cost Housing
- Appointed by eThekweni to undertake a Basic Assessment for Philani Valley Phase 17-25 Low Cost Housing
- Appointed by the Ethekeeni Housing Department to prepare Environmental Scoping Reports, EMPs and to undertake auditing for the following low cost housing projects:
 - Africa, Inanda
 - Stop 8/Nambia, Emtshabeni
 - Kwamashu Newland
 - Mshayazafe
 - Kwadabeka C
 - Verulam: Trenance Park 2B and Redcliffe
 - Lamontville North West
- Appointed to undertake an Environmental Considerations report for Vulemehlo Low cost Housing

Medium – High Income Housing:

- Appointed by Canboria Developments to prepare a Scoping Report for the proposed medium income housing project at Broadlands.
- Appointed by Midnight Storm Investors to prepare an Environmental Considerations Report for the development of a new multi-storey residential development on Lots 739 – 744, Tongaat.
- Appointed by Midnight Storm Investors to prepare an EMP and undertake auditing for Simbhiti Eco-Estate

CURRICULUM VITAE

Michelle Nevette

LINEAR DEVELOPMENT / INFRASTRUCTURE PROJECTS

- Project management and preparation of a range of Environmental Applications for the uMhlathuze Municipality Engineering Department for the financial year 2003/2004: This included environmental applications and auditing for road, water, canal, subdivisions and informal trading facilities projects.

Water Supply Schemes:

- Northern Aqueduct Augmentation Pipeline: Appointed by Aurecon Consulting Engineers for the construction of a pipeline from Ntuzuma to Ogunjini.
- Appointed by VGC to provide environmental services (environmental application, EMP and auditing) for a range of water supply projects, e.g. Mhlana, Madlebe, Khoza Water Supply Projects.
- Witz Road Water Reticulation for Ethekwini Municipality – Basic Assessment and monthly auditing for a 6500m of 160mm diameter pipeline.
- Appointed by uThungulu to undertake a scoping process for Middeldrift water supply
- Mtamvuna River Irrigation Potential Investigation, Izingolweni Sub-region, KwaZulu-Natal.

Roads and Bridges:

- Basic Assessment & EMPr for the upgrade of the Theunissen Road, Stanger
- Basic Assessment & EMPr for the proposed construction of a pedestrian bridge in Burbreeze, Tongaat
- Basic Assessment & EMPr for the proposed construction of a pedestrian bridge in Emansomini, Umlazi
- Integrated Rapid Public Transport Network (IRPTN) – Appointed by the Ethekwini Transport Authority, responsible for the planning, implementation and operations of public transport in the City, to undertake an EIA report for the IRPTN Corridor 1, Bridge City to Durban CBD, and Corridor 9, Bridge City to Umhlanga
- Integrated Rapid Public Transport Network (IRPTN) – Appointed by the Ethekwini Transport Authority, responsible for the planning, implementation and operations of public transport in the City, to undertake a BA report for the IRPTN Corridor 3, Bridge City to Pinetown.
- Appointed by eThekweni to undertake a Basic Assessment for the proposed Warwick Flyover (inbound and outbound) in Warwick Precinct as part of the 2010 World Cup Initiative.
- Appointed by eThekweni to undertake a Basic Assessment for the proposed Inwabi Road I Umlazi.
- Appointed by Umhlathuze Municipality to undertake an application for Exemption for the upgrade of a 1,5km gravel road (including a proper river crossing) within the existing alignment of the road in Ngwelezane.
- Appointed to undertake an application for Exemption for the Greytown Road Upgrade, KwaZulu-Natal
- Appointed to undertake a scoping process (including EMP) for the upgrading of Broadway, Durban North on behalf of the eThekweni Municipality Appointed to undertake an application for Exemption, EMP and auditing for the upgrading of the Wick/Todd Street in Verulam

Electricity/ Power lines

- Appointed by appointed by TRANS-AFRICA PROJECTS to manage the environmental process for the proposed Spoornet Coalink Upgrade Project. The project consists of the upgrade of existing infrastructure and three new transmission sub-stations, in order to increase the supply of electricity for new locomotives that Spoornet have ordered to add to the export capacity of coal. The proposed project crosses provincial borders starting in Empangeni (Natal) and extends across Newcastle to Ermelo (Mpumalanga)
- Appointed by uMhlathuze Municipality to undertake an EIA for the proposed Cygnus Electricity Substation project.
- Appointed by Eskom to undertake the scoping process (including the preparation of an EMP) for a substation and associated powerlines in Mtunzini
- Electricity Supply through Mhlanga Forest Estate Development EMP, KwaZulu-Natal, South Africa

CURRICULUM VITAE

Michelle Nevette

Renewable energy projects

- Juwi, EIA for the proposed development of 2x75MW Mayogi Solar Photovoltaic (PV) Plant, 132kV Power line and associated infrastructure near Kirkwood, Eastern Cape
- Bonsmara BAR and EIA for proposed development of a Solar PV Facility and associated infrastructure in the Moqhaka Local Municipality and the Fezile Dabi District, in the Free State Province.
- Upgrade Energy, Basic Assessment (BA) for the Proposed Development of the 200MW Lionthorn Solar Photovoltaic (PV) Plant, 132kV Power line and associated infrastructure near Leeudoringstad in the North West Province, Maquassi Hills Local Municipality, Dr Kenneth Kaunda District Municipality, 2021
- Upgrade Energy, Standard application for the Proposed Development of the 132kV Power line and associated infrastructure near Leeudoringstad in the North West Province, Maquassi Hills Local Municipality, Dr Kenneth Kaunda District Municipality, 2021
- Upgrade Energy, Basic Assessment (BA) for the Proposed Development of the 15MW Leeumax Solar Photovoltaic (PV) Plant, 132kV Power line and associated infrastructure near Leeudoringstad in the North West Province, Maquassi Hills Local Municipality, Dr Kenneth Kaunda District Municipality, 2021
- Upgrade Energy, Basic Assessment (BA) for the Proposed Development of the 9.9MW Wildebeestkuil 1 and 2 Solar Photovoltaic (PV) Plant, 132kV Power line and associated infrastructure near Leeudoringstad in the North West Province, Maquassi Hills Local Municipality, Dr Kenneth Kaunda District Municipality, 2021
- Upgrade Energy, Basic Assessment (BA) for the Proposed Development of the 9.9MW Leeuwbosch 1 and 2 Solar Photovoltaic (PV) Plant and associated infrastructure near Leeudoringstad in the North West Province, Maquassi Hills Local Municipality Dr Kenneth Kaunda District Municipality, 2021
- Upgrade Energy, Basic Assessment (BA) for the Proposed Development of the 132/11kV Leeudoringstad Solar Plant Substation near Leeudoringstad in the North West Province, Maquassi Hills Local Municipality in the Dr Kenneth Kaunda District Municipality, 2021
- Koup 1 and 2 Wind Energy Facilities and associated infrastructure – Appointed by Genesis EcoEnergy (Pty) Ltd to undertake the BA processes for the renewable wind energy facilities associated infrastructure.
- Beaufort West Wind Energy Facilities and associated infrastructure – Appointed by South Africa Mainstream Renewable Power Developments to undertake BA processes for the renewable wind energy facilities associated infrastructure.
- Ceres Wind Energy Facilities and associated infrastructure – Appointed by South Africa Mainstream Renewable Power Developments to undertake BA processes for the renewable wind energy facilities and associated infrastructure.
- Skilpad 1, 2 and 3 Solar PV Energy Facilities – Appointed by ABO Wind Renewable Energies (Pty) Ltd to undertake the BA processes for three Solar PV Facilities.
- EA Amendment Processes for six (6) renewable energy facilities in the Northern Cape – Appointed by South Africa Mainstream Renewable Power Developments.

Pipelines

- Sezela Marine Outfall Pipeline, Scoping Report & Environmental Management Plan, KZN
- Petronet Re-Routing of existing DJP Pipeline around Pietermaritzburg EIA Scoping Report & Environmental Management Plan, KwaZulu-Natal

Cemeteries

- Basic Assessment & EMPr for the proposed Dannhauser Cemetery, Dannhauser

WATER USE LICENSES

- Cato Ridge Pilot Intermodal Project in Cato Ridge (Zone 1), KwaZulu-Natal. Appointed by the Cato Ridge Logistics Hub Consortium (Pty) Ltd. Compilation and Submission of Water Use License.
- Mandela Crossroads Water Use License. Ethekwini Municipality. Compilation and Submission of Water Use license.
- Bridge City Depot Water Use License. Ethekwini Municipality. Compilation and Submission of Water Use license.
- Zamani 1B Phase B1 and B2 Water use License. Ethekwini Municipality. Compilation and Submission of Water Use license.

CURRICULUM VITAE

Michelle Nevette

AMENDMENT APPLICATIONS

- Amendment of the Renishaw Mixed Use Development Environmental Authorisation, Phase 3
- Amendment of the environmental authorisation for the Engen Galleria Petrol Filling Station
- Malandela Crossroads Development – Appointed by eThekweni Municipality to amend the Environmental Authorisation to include an amended layout.
- Northern Aqueduct Augmentation Pipeline – Appointed by Aurecon Consulting Engineers to amend the Environmental Authorisation for changes in the pipeline alignment from Ntuzuma to Ogunjini.
- Bridge City Depot – Appointed by the eThekweni Municipality to amend the Environmental Authorisation to extend the footprint of the development and apply for construction within wetland buffers.
- Zamani Low Cost Housing Development – Appointed by the eThekweni Municipality Housing Department to amend/extend the validity of the Environmental Authorisation
- Malandela Crossroads Development – Appointed by eThekweni Municipality to amend the Environmental Authorisation to exclude certain parties from a condition of the EA.
- Integrated Rapid Public Transport Network (IRPTN) C3B – Appointed by eThekweni Transport Authority to amend the Environmental Authorisation to include a deviation in the transport route as well as to add an additional depot site to the authorisation.

Courses Attended

- 2021: Project Management Course
- 2018: ISO 14001:2015 Introduction and Implementation of an EMS
- 2018: Risk ZA
- 2017: Amendments to the EIA Regulations
- 2017: NEC 3 Course

CURRICULUM VITAE

Luvanya Naidoo

Name Luvanya Naidoo

Profession Environmental Scientist

Name of Firm SiVEST SA (Pty) Ltd

Present Appointment Environmental Health & Safety Consultant
Environmental Division

Years with Firm 18 Years

Date of Birth 15 March 1986

Nationality South African



Education

- Kharwastan Secondary School
- UNISA
- NOSA

Professional Qualifications

- Bachelor of Science (Geography)
- Bachelor of Science Honours (Environmental Monitoring and Modelling)
- Registered Professional Natural Scientist (SACNASP) Pr.Sci.Nat Registration No. 126107
- Registered Environmental Assessment Practitioner (EAPASA) Registration No. 2019/1404
- Carbon Footprint Analyst
- Safety Management Training Course (SAMTRAC)

Membership of Professional Societies

- South African Council for Natural Scientific Professions (SACNASP) Pr.Sci.Nat. Reg No. 126107
- Environmental Assessment Practitioners Association of South Africa (EAPASA) Reg No. 2019/1404
- Member of the International Association for Impact Assessment (IAIA)
- Registered Construction Health and Safety Officer (SACPCMP)

Employment Record

Sep 2008 – date SiVEST Environmental Division : Environmental Scientist
 July 2004 – Sep 2008 SiVEST Environmental Division: Project Secretary

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Fluent	Fluent	Fluent

Years of Working Experience: 13 years (Environmental Profession)

Countries of Work Experience:

- South Africa

Fields of Specialisation

- Project Management
- Environmental Impact Assessments
- Environmental Compliance Monitoring
- Health & Safety Management

CURRICULUM VITAE

Luvanya Naidoo

Overview

Luvanya has been with SiVEST since July 2004 as an Administrative Assistant and project secretary for SiVEST's Environmental Division. Her role since 2008 has been an Environmental, Health and Safety Consultant for SiVEST. Luvanya has completed a Bachelor of Science degree majoring in Geography and a Bachelor of Science Honours Degree in Environmental Monitoring and Modelling. She is a registered Professional Natural Scientist (SACNASP) and a registered Environmental Assessment Practitioner (EAPASA). Luvanya has extensive experience in compilation of environmental impact assessments, prefeasibility assessments, environmental management programmes and environmental auditing. She has also assisted clients with health and management on many construction projects and is a registered Construction Health and Safety Officer (SACPCMP). Her current role includes leading environmental, health and safety projects within the Environmental Division.

Key Projects Experience

ENVIRONMENTAL

Environmental Impact Assessments (EIA)

- EIA for the Finningley Mixed Use Development
- EIA for the Renishaw Mixed Use Development
- EIA for the Shayamoya Slums Clearance Project
- EIA for the Greater Amaoti Housing Project
- EIA for the Richmond Housing Development
- EIA for the Umlazi Housing Development
- EIA for the Klipkraal Wind Energy Facilities and Associated Infrastructure (x 7 EIA's)
- EIA for the Koup 1 and Koup 2 Wind Energy Facilities and Associated Infrastructure (x 2 EIA's)
- EIA for the Pofadder Wind Energy Facilities and Associated Infrastructure (x 3 EIA's)
- EIA for the Ujekamanzi Wind Energy Facilities and Associated Infrastructure (x 4 EIA's)

Basic Assessments

- Basic assessment & EMPr for the proposed borrow areas for emergency sand supply to Durban beaches
- Basic Assessment & EMPr for the proposed Eskom powerlines as part of the infrastructure upgrade
- Basic Assessment & EMPr for the proposed expansion of the Brake Village Temple in Tongaat
- Basic Assessment & EMPr for the proposed construction of a pedestrian bridge in Burbreeze, Tongaat
- Basic Assessment & EMPr for the proposed construction of a pedestrian bridge in Emansomini, Umlazi
- Basic Assessment & EMPr for the expansion of the Evonik Peroxide Plant in Amanzimtoti.
- Basic Assessment & EMPr for the proposed intermodal in Cato Ridge
- Basic Assessment & EMPr for the expansion of the Engen Galleria Petrol Filling Station, Amanzimtoti
- Basic Assessment & EMPr for the upgrade of the Theunissen Road, Stanger
- Basic Assessment & EMPr for the proposed Dannhauser Cemetery, Dannhauser
- Basic Assessment for the Wildebeestkuil 1 and Wildebeestkuil 2 Solar Photovoltaic Plant and associated Infrastructure (x 2 BA's)
- Basic Assessment for the Leeuwbosch 1 and Leeuwbosch 2 Solar Photovoltaic Plant and associated Infrastructure (x 2 BA's)
- Basic Assessment for six (6) Renewable Energy Facilities: Dwarsrug WEF, Plats East PV, Plats West PV, Mierdam PV, Droogfontein 3 PV and Loeriesfontein 3 PV
- Basic Assessment for the Beaufort West Solar Energy Facilities (x 2 BA's)
- Basic Assessment for the Proposed Expansion of the Tiffany's Shopping Centre
- Basic Assessment for the Proposed Additional Access at Reddam School in Umhlanga

Amendments of Authorisations

- Amendment of the environmental authorisation for the proposed expansion of the Kindlewood Residential Estate
- Amendment of the environmental authorisation for Phase 3 of the Renishaw Mixed Use Development
- Amendment of the Renishaw Mixed Use Development Environmental Authorisation, Phase 3

CURRICULUM VITAE

Luvanya Naidoo

- Amendment of the environmental authorisation for the Engen Galleria Petrol Filling Station
- Amendment of the environmental authorisation for the Engen Nongoma Petrol Filling Station

Duty of Care and EMPr

- Preparation of Duty of Care Reports and EMPr's for the Keates Drift Bulk Water Supply Phases 1,2 & 4
- Preparation of a Duty of care & EMP for the proposed Kwadabeka Bus Route
- Preparation of a site specific EMPr for the construction of a Road Lodge in PMB
- Review of the EMPr for the Transnet Dry Dock Upgrade, Durban

Prefeasibility Assessments

- Investigation and prefeasibility of potential sites for the LNT Plant Relocation
- Prefeasibility study for a site in Cato Ridge for the construction of a pilot intermodal
- Investigation and enquiry for a potential site for an Engen petrol filling station in Madadeni
- Preparation of an Environmental Masterplan for the Cato Ridge Logistics Hub
- Prefeasibility Assessment for the proposed Cotton Gin in Hectorspruit
- Prefeasibility Assessment for the Engen owned properties in Cato Ridge
- Prefeasibility Assessment for the Richmond Housing Development in eThekweni
- Prefeasibility Assessment for the Umlazi Housing Development in eThekweni
- Prefeasibility Assessment and enquiry for the proposed new access road for Reddam House, Umhlanga
- Prefeasibility Assessment for the proposed increase in MAP production for FOSKOR in Richards Bay.

Environmental Control Officer (ECO)

- ECO for the Keates Drift Bulk Water Supply Phases 1,2 & 4
- ECO for the Lower Tugela Bulk Water Supply Off-Take 1, 10, 11,12
- ECO for the construction of Izinga Phase 1 Control Centre and Landscaping
- ECO for the Construction of the Ridgeside Irrigation Dam
- ECO for construction of Izinga Phases 2 A, 2E, Landscaping and gatehouses
- ECO for the construction of the Summer View Residential Apartments
- ECO for the construction of a dry good and cold storage warehouse Shoprite in Canelands
- ECO for the construction of roads and civil services for the Kindewood Residential Estate
- ECO for the construction of the eThekweni IRPTN C3A Route and Stations
- ECO for Phase 1 of the Renishaw Hills Development
- ECO for the construction of sidewalks in Cornubia
- ECO of the upgrade of the Sappi Saiccor Woodyard in Umkomaas
- ECO for the construction of sewer, rising main and pump station for the Kindewood Residential Estate
- ECO for the Transnet Dry Dock Upgrade
- ECO for the Maize to Molasses NCP Plant Upgrade Project
- ECO for the Cornubia Sewer Reticulation and Infrastructure Upgrade
- ECO for the Glen Arum Farm
- ECO for the Expansion of Shoprite Warehouse in Canelands
- ECO for the Construction of the Engen Nongoma Petrol Filling Station

Section 24 G Applications

- Section 24 Application for the unauthorised construction of an Astroturf for Ashton College
- Section 24 Application for the unauthorised construction of an additional shed on the Glen Arum Farm

Legal Compliance

- Legal Register for the Transnet C01 Conveyor Project
- Risk Assessment for the expansion of the Sumitomo Rubber Plant
- Risk Assessments for the fire system upgrade of 25 Transnet Pipeline sites
- Review legal register and update the Environmental Emergency Procedures for the SRI Group

CURRICULUM VITAE

Luvanya Naidoo

- Legal compliance audit of the environmental authorisation for the Brake Village SSS Alayam
- Environmental audits for the SRI Group
- Waste Management plan for the Glen Arum Farm

HEALTH AND SAFETY

Health and Safety Management on behalf of the Client

- Construction of the Spar Mt Edgecombe Warehouse
- Construction of the Shoprite Canelands Dry Good and Cold Storage Warehouses
- Construction of the Keates Drift Phases 1,2 & 4 Water Reticulation Pipeline
- Construction of Spar Bosol Warehouse in Phoenix
- Upgrade of Nkandla Roads
- Upgrade of the roads in Sundumbili Phases 4, 5, 6 & 7
- Construction of the Embuthweni Water Pipeline
- Construction of the Luthuli Water Pipeline
- Construction of the Bulwer Farm Bulk Water Supply
- Expansion of the Spar Mt Edgecombe Warehouse
- Construction of the Transnet Central Staff Facility, Durban
- Construction of the eThekweni IRPTN C3A Route
- Construction of the Renishaw Hills Development, Phase 1
- Upgrade of the Hlomendini Taxi Route
- Construction of the Zimbali Oceans Edge Development
- Upgrade of the roads in Highview Park, Mandeni
- Construction of the Enembe Community Hall, Mandeni
- NCP Alcohols maize to Molasses Conversion Project, Durban
- NCP Alcohols Dehydration Plant, Durban

Presentations

- Health and Safety Presentations for different municipalities for COGTA

Health and Safety Documentation

- Preparation of health and safety specifications and baseline risk assessments for 25 Transnet Pipeline sites.
- Preparation of Risk Assessments for the SRI Group, Newcastle
- Review and update of procedures and risk assessments for KAZZ, Durban

CURRICULUM VITAE

Prisantha Govender

Name Prisantha Govender

Profession Environmental Consultant

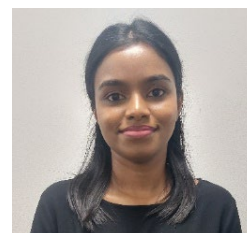
Name of Firm SiVEST SA (PTY) LTD

Present Appointment Assistant Environmental Consultant:
SiVEST Environmental Division

Years with Firm Joined 1st April 2023

Date of Birth 01 October 1995

Nationality South African

**Education**

- National Senior Certificate - Mountview Secondary (2009 - 2013)

Professional Qualifications

- BSc. (Honors) Environmental Management - UNISA (2018 - 2020)
- BSc. Environmental Science - University of KwaZulu-Natal (2014 - 2017)

Short Courses

- Environmental Law (2020)
- Environmental Impact Assessment (2020)

Membership to Professional Societies

- International Association for Impact Assessment South Africa (IAIAsa) (Member No. 6454)
- Environmental Assessment Practitioners Association of South Africa (EAPASA) (Reg. No. 2020/2590)

Employment Record

Apr 2023 – to date SiVEST SA (Pty) Ltd: Assistant Environmental Consultant

2019 – Mar 2023 K2M Environmental (Pty) Ltd: Environmental Assessment Practitioner

2017 – 2018 Built Environment Training Academy (BETA): Environmental Intern

LANGUAGE	SPEAK	READ	WRITE
English	Good	Good	Good

Years of Working Experience: 5 Years

Countries of Work Experience

- South Africa

Fields of Expertise

- ArcGIS & Mapping
- Sustainable Development
- Rural and Urban Housing Development
- Project Management

Overview

Prisantha is a Professionally Registered Environmental Assessment Practitioner with more than 3 years of professional experience. Prisantha has extensive experience in consulting, specifically on environmental legislative requirements. In her previous roles, her responsibilities included project management of Screening Assessments, Basic Assessments, Scoping and Environmental Impact Assessments, Environmental Management Programmes / Plans, report preparation and compilation, undertaking Public Participation Processes, reviewing of specialist reports, GIS Mapping and spatial analyses, preparation of project proposals and liaising with specialists and authorities.

Project Experience

BASIC ASSESSMENTS / SCOPING & ENVIRONMENTAL IMPACT ASSESSMENTS:

- Taiwan Informal Settlement Upgrade located in Khayelitsha, Western Cape - *Environmental Authorisation granted in July 2021*
- Mtubatuba Phase 2 Subsidized Housing Development, Mtubatuba Local Municipality - *Environmental Authorisation granted in November 2020*
- Phiwo's Piggery Development, Umzumbe Local Municipality - *Environmental Authorisation granted in March 2021*
- Brakpan Extension 12 Housing Development, City of Ekurhuleni - *Environmental Authorisation granted in May 2021*
- Eldorado Park Extension 6 Housing Development, City of Johannesburg - *Environmental Authorisation granted in July 2021*
- Enyathi Subsidised Housing Development, Abaqulusi Local Municipality - *Environmental Authorisation granted in August 2021*
- Eldorado Park Proper Project A Housing Development, City of Johannesburg - *Environmental Authorisation granted in September 2021*
- Slovas Housing Development, Umfolozi Local Municipality - *Environmental Authorisation granted in November 2021*
- Harry Gwala Massification Irrigation Project: Nguse Site, Umzimkhulu Local Municipality - *Environmental Authorisation granted in June 2022*
- Harry Gwala Massification Irrigation Project: Driefontein Site, Umzimkhulu Local Municipality - *Environmental Authorisation granted in June 2022*
- Maqaqa Piggery Development, Umdoni Local Municipality - *Environmental Authorisation granted in November 2022*
- Ezakheni Stimela D Housing Development, Alfred Duma Local Municipality - *Environmental Authorisation granted in December 2020*
- Harding Township Establishment, Umuziwabantu Local Municipality - *Environmental Authorisation granted in March 2022*
- Hollingwood and Lincoln Meade Integrated Housing Development, Msunduzi Local Municipality - *Environmental Authorisation granted in August 2022*
- eThembeni Integrated Housing Development, Msunduzi Local Municipality
- Glenwood South East Sector Subsidised Housing Development, Msunduzi Local Municipality
- Enhlalakahle Phase 2 Subsidised Housing Development, Umvoti Local Municipality

CURRICULUM VITAE

Prisantha Govender

PRELIMINARY ENVIRONMENTAL / SCREENING ASSESSMENTS:

- Cato Ridge Industrial Warehouse, eThekweni Metropolitan Municipality
- uMlazi T Section Community Residential Units (CRUs), eThekweni Metropolitan Municipality
- Hammarsdale Truck Stop, eThekweni Metropolitan Municipality
- eThekweni Northern Rural Settlement Plan
- Phiwos Piggery, Umzumbe Local Municipality
- Botshabelo Thaba Nchu Integration Node, Free State Province
- Vaalkop Rural Housing Development, Alfred Duma Local Municipality
- Eshane Rural Housing Development, Umvoti Local Municipality
- Kwanobamba Rural Housing Development, Ulundi Local Municipality
- San Souci Subsidised Housing Development, KwaDukuza Local Municipality
- Gluckstadt Rural Housing Development, Abaqulusi Local Municipality
- Mbizini Subsidised Housing Development
- Harding Township Establishment, Umuziwabantu Local Municipality
- uMlazi Urban Housing Development, eThekweni Metropolitan Municipality
- Buthelezi Mganzi Rural Housing Development
- Enyathi Housing Development, Abaqulusi Local Municipality
- Hollingwood and Lincoln Meade Integrated Housing Development, Msunduzi Local Municipality
- Social Housing Development located on Erf 174, Slang Spruit, Msunduzi Local Municipality
- Mahlangosi Rural Housing Development
- Rietfontein 128 IR Housing Development
- Vosloorus Extension 7 Project B Housing Development
- Weltevreeden 118 IR Housing Development, City of Johannesburg
- Cottonlands Housing Development, eThekweni Metropolitan Municipality
- Maqaqa Piggery, Umdoni Local Municipality
- Eldorado Park, Extension 6 Housing Development, City of Johannesburg
- Eldorado Park, Extension 7 Housing Development, City of Johannesburg
- Eldorado Park Proper Project A Housing Development, City of Johannesburg
- Eldorado Park Proper Project C Housing Development, City of Johannesburg
- Eersterust, Extension 6 Housing Development, City of Tshwane
- Brakpan, Extension 12 Housing Development, City of Ekurhuleni
- Shakaspring Subsidised Housing Development, KwaDukuza Local Municipality

WATER USE LICENSE APPLICATIONS:

- Eldorado Park Extension 6 Housing Development, City of Johannesburg
- Bryanston Extension 3 Housing Development, City of Johannesburg
- Brakpan Extension 12 Housing Development, City of Ekurhuleni
- Harding Township Establishment, Umuziwabantu Local Municipality
- Mpushini Park Integrated Housing Development

OTHER APPLICATIONS / ASSESSMENTS:

- Royal Bafokeng Integrated Water Management Solution: Groundwater Water Resource Augmentation, North West Province - Environmental Management Plan
- Utrecht Water Treatment Works - Environmental Management Plan
- Mobeni Pumproom and Tank Base, eThekweni Metropolitan Municipality - Environmental Management Plan
- Nyathikazi Subsidised Housing Development, KwaDukuza Local Municipality - Amended Environmental Management Programme
- Madundube Subsidised Housing Development, KwaDukuza Local Municipality - Amendment Application and Amended Environmental Programme
- Hyde Park Country Estate Development, KwaDukuza Local Municipality - Amendment Application
- Bakubang Ledig Mixed Used Development, North West Province - Amendment Application

CURRICULUM VITAE

Prisantha Govender

-
- Ottawa Filling Station, eThekweni Metropolitan Municipality - Socio Economic / Market Study
 - Mandeni Local Municipality Human Settlements Sector Plan
 - Dihlabeng Local Municipality Human Settlements Sector Plan

Skills & Competencies

- Compilation of Basic Assessment and Environmental Impact Assessment Reports; Environmental Management Programmes; Environmental Screening and Preliminary Reports
- Compilation of Environmental Enquiries and Applications (for Authorizations and Amendments)
- Assessment and review of specialist reports
- Preparation of Environmental Proposals for new projects
- Public Participation and Stakeholder Engagement
- Project Management
- Microsoft Office (Word, Excel, PowerPoint)
- ArcGIS Spatial Analysis and Mapping
- Knowledge of AutoCAD
- Knowledge of Environmental Legislation (NEMA, NWA)
- Able to work independently and in a team environment.
- Able to work well under pressure and in strict timeframes.
- Able to work in close collaboration with specialists from various disciplines and liaise with clients and authorities.
- Ability to communicate well in writing and verbally.
- Strong attention to detail
- Ability to plan, manage resources and meet deadlines.



Appendix B: Environmental Incidents Sheet



Appendix C: Complaints Record Sheet



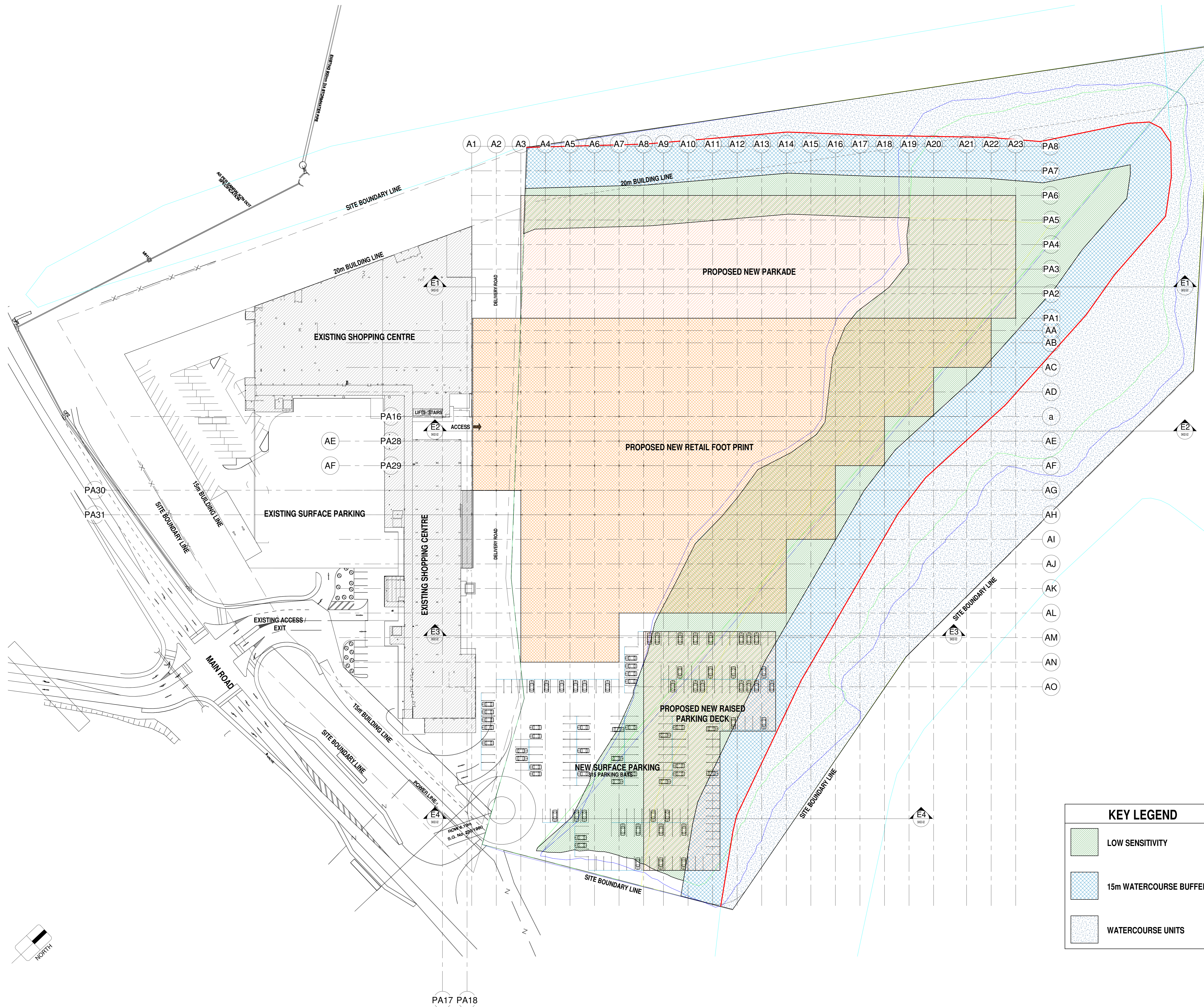
Complaints Record Sheet

COMPLAINTS RECORD SHEET	File Ref:	DATE:
	Page of
COMPLAINT RAISED BY:		
CAPACITY OF COMPLAINANT:		
COMPLAINT RECORDED BY:		
COMPLAINT:		
PROPOSED REMEDIAL ACTION:		
EO: _____ Date: _____		
NOTES BY ECO:		
EO: _____ Date: _____ Site Manager: _____ Date: _____		



Appendix D: Site Development Layout Plan

REVISIONS	
Nr	Description
1	ISSUE FOR DISCUSSION
2	REVISE BUFFER ZONE FROM 20m TO 15m



KEY LEGEND	
	LOW SENSITIVITY
	15m WATERCOURSE BUFFER
	WATERCOURSE UNITS

1 | GROUND FLOOR / SITE PLAN
SCALE: 1:500



Office: 9 First Floor, New Salt Rock Shopping Centre, PO Box 6030 Zirconia 4488
 Cell: 071 622 3963, Email: info@urbisarch.com, SHCP Reg No: 24693825

PROJECT: PROPOSED NEW ADDITION TO TIFFANY'S SHOPPING CENTRE AT SALT ROCK PTN 173 (OF 921) OF LOT 71 FOR SOUTHERN FRESH FOOD

ADDRESS: PROVINCIAL ROAD NO. 330 SALT ROCK

JOB: ATM-060

DRAWING NR: SK02-01

DESCRIPTION	Site Plan
REV NR: 2	SHEET NR: 1
SCALE: 1:500	SHEET SIZE: A0
DATE: 2022/06/20 10:00:30	DRAWN: JACQUES
ISSUE STATUS: FOR INFORMATION ONLY	SIGNATURES:



**Appendix E:
Heritage / Paleontological Chance Find
Protocol**

Chance Find Protocol

If any fossils are found, a Palaeontologist must be notified immediately by the ECO and/or EAP and a site visit must be arranged at the earliest possible time with the Palaeontologist.

In the case of the ECO or the Site Manager becoming aware of suspicious looking palaeo-material:

- The construction must be halted in that specific area and the Palaeontologist must be given enough time to reach the site and remove the material before excavation continues.
- Mitigation will involve the attempt to capture all rare fossils and systematic collection of all fossils discovered. This will take place in conjunction with descriptive, diagrammatic and photographic recording of exposures, also involving sediment samples and samples of both representative and unusual sedimentary or biogenic features. The fossils and contextual samples will be processed (sorted, sub-sampled, labeled, and boxed) and documentation consolidated, to create an archive collection from the excavated sites for future researchers.

Functional responsibilities of the Developer

1. At full cost to the project, and guided by the appointed Palaeontological Specialist, ensure that a representative archive of palaeontological samples and other records is assembled to characterize the palaeontological occurrences affected by the excavation operation.
2. Provide field aid, if necessary, in the supply of materials, labour and machinery to excavate, load and transport sampled material from the excavation areas to the sorting areas, removal of overburden if necessary, and the return of discarded material to the disposal areas.
3. Facilitate systematic recording of the stratigraphic and palaeo-environmental features in exposures in the fossil-bearing excavations, by described and measured geological sections, and by providing aid in the surveying of positions where significant fossils are found.
4. Provide safe storage for fossil material found routinely during excavation operations by construction personnel. In this context, isolated fossil finds in disturbed material qualify as “normal” fossil finds.
5. Provide covered, dry storage for samples and facilities for a work area for sorting, labeling and boxing/bagging samples.
6. Costs of basic curation and storage until collected. Documentary record of palaeontological occurrences must be done.
7. The contractor will, in collaboration with the Palaeontologist, make the excavation plan available to the appointed specialist, in which appropriate information regarding plans for excavations and work schedules must be indicated on the plan of the excavation sites. This must be done in conjunction with the appointed specialist.
8. Initially, all known specific palaeontological information will be indicated on the plan. This will be updated throughout the excavation period.
9. Locations of samples and measured sections are to be pegged, and routinely and accurately surveyed. Sample locations, measured sections, etc., must be recorded three-dimensionally if any “significant fossils” are recorded during the time of excavation.



SiVEST Environmental Division

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