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ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

**Proposed Mixed Business and
Residential Development within
Portion 64 of Farm Vlakfontein
238 IQ, Tshepisoong Extension 4,
Johannesburg West, Gauteng**

Report No : 16011-46-Rep-001-Tshepisoong
EMPr-Rev0

Submitted to :

Gauteng Department of Agriculture and Rural
Development
P.O. Box 8769
Johannesburg
2000

18 August 2016

16011

DOCUMENT CONTROL SHEET

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DOCUMENT APPROVAL

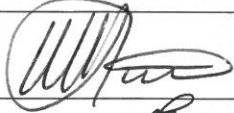

ACTION	DESIGNATION	NAME	DATE	SIGNATURE
Prepared	Project Manager	Virginia Ramakuwela	4 July 2016	
Reviewed/Approved	Project Associate	Mathys Vosloo	17 August 2016	

TABLE OF CONTENTS

SECTION	PAGE
1 INTRODUCTION AND BACKGROUND.....	1
2 GENERAL OBJECTIVES AND PURPOSE OF EMPR	1
3 DOCUMENT ROADMAP	2
4 PROJECT DESCRIPTION.....	3
4.1 Study Area	3
4.2 Project Activities.....	7
4.3 Existing services or facilities.....	8
4.4 Description of Project Component.....	9
4.4.1 Pre-Construction and Construction process for the proposed development.....	9
4.4.2 Operational activities	9
4.4.3 Decommissioning activities.....	9
5 DETAILS AND EXPERTISE OF ENVIRONMENTAL ASSESSMENT PRACTITIONER.....	10
6 DETAILS OF PROJECT PROPONENT	11
7 LEGISLATIVE FRAMEWORK	11
7.1 Legislative Requirements for the EMPr	11
7.2 Other Applicable Legislation.....	12
7.3 List of activities associated with the project	14
8 ORGANISATION STRUCTURE	15
9 ENVIRONMENTAL ROLES AND RESPONSIBILITIES.....	16
9.1 Gauteng Department of Agriculture and Rural Development.....	16
9.2 General roles and responsibilities	16
10 ENVIRONMENTAL ISSUES IDENTIFIED.....	19
11 APPROACH TO CORRECTIVE ACTION.....	25
11.1 Implementation of Corrective Action.....	25
12 METHOD STATEMENTS	25
13 ENVIRONMENTAL AWARENESS PLAN	27
14 TRAINING	29
14.1 Environmental Authorisation.....	29
15 ENVIRONMENTAL MANAGEMENT MEASURES.....	29
15.1.1 Planning Phase	30
15.1.2 Construction Phase	31
15.1.3 Operational Phase.....	34
15.1.4 Decommissioning Phase	36
16 MONITORING	37
16.1 Auditing.....	37
16.2 Site Documentation or Reporting	38
16.3 Monitoring	38
16.3.1 Undertaking audits.....	38
16.3.2 Compliance with the EMPr	39
16.4 Environmental Contact Person.....	39
16.5 Emergency Numbers.....	39
17 SITE REHABILITATION.....	39
17.1 Removal of structures and infrastructure	39
17.2 Waste and pollution control	40
17.3 Grassing.....	40
17.4 Ripping and Scarifying	40
17.5 Topsoil replacement and soil amelioration.....	40

17.6	Maintenance of rehabilitated areas.....	41
18	FINANCIAL PROVISIONING	41
19	CONCLUSION.....	42

LIST OF FIGURES

Figure 4-1:	Locality Map	4
Figure 4-2:	Layout Map	5
Figure 4-3:	Municipal Boundary Map	6
Figure 8-1:	Organisation Structure for Environmental Reporting.....	16

LIST OF TABLES

Table 3-1:	Document Roadmap.....	2
Table 4-1:	Summary of the proposed project's activities.....	7
Table 5-1:	Details of EAP on this project	10
Table 6-1:	Proponent's details	11
Table 7-1:	List of Applicable Legislation	12
Table 7-2:	Detailed description of the listed activity associated with the project.....	15
Table 9-1:	Roles and Responsibilities.....	17
Table 10-1:	Summary of Pre-Construction and Construction Phase Impacts.....	20
Table 10-2:	Summary of Operational Phase Impacts	23
Table 10-3:	Summary of Decommissioning Phase Impacts.....	24
Table 15-1:	Impacts, Management/ Mitigation Measures during Pre-Construction and Construction Phase	31
Table 15-2:	Impacts, Management/ Mitigation Measures during Operational Phase.....	34
Table 15-3:	Impacts, Management/ Mitigation Measures during Decommissioning Phase	36
Table 18-1:	Guideline to fines for minor, moderate and serious offences	42

LIST OF APPENDICES

APPENDIX A: EAP's CV

APPENDIX B: ENGINEERING DRAWING

LIST OF ACROYNYS

Acronym	Description
BA	Basic Assessment
BAR	Basic Assessment Report
CA	Competent Authority
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EO	Environmental Officer
GDARD	Gauteng Department of Agriculture and Rural Development
GDACE	Department of Agriculture, conservation and Environment
GISSA	Geo-Information Society of South Africa
IAIA	International Association for Impact Assessment
JRA	Johannesburg Road Agency
MS	Method Statement
NACA	National Association for Clean Air
NEMA	National Environmental Management Act 107 of 1998 (as amended)
NEMWA	National Environmental Management Waste Management Act 59 of 2008
NWA	National Water Act 36 of 1998
OHS	Occupational Health and Safety Act 85 of 1993
PAIA	Promotion of Access to Information Act 2 of 2000
PLATO	South African Council for Professional and Technical Surveyors
PM	Project Manager
PPE	Personal Protection Equipment
PPP	Public Participation Process
RoD	Record of Decision
SACNASP	Natural Scientist with the South African Council for Natural Scientific Professions

GLOSSARY OF TERMS

Term	Description
Environment	Environment means the surroundings within which humans exist and that are made up of – (i) the land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; (iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.
Environmental Aspect	Element of an organization's activities or products or services that can interact with the environment.
Environmental Assessment Practitioner	Individual responsible for the planning, management, coordination or review of Environmental Impact Assessments, Strategic Environmental Assessments, Environmental Management Programmes or any other appropriate environmental instruments introduced through regulations.
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.
Interested and Affected Party	Interested and Affected Party for the purposes of Chapter 5 of the NEMA and in relation to the assessment of the environmental impact of a listed activity or related activity, means an interested and affected party contemplated in Section 24(4)(a)(v) of the NEMA and which includes - a) Any person, group of persons or organisation interested in or affected by such operation or activity; and b) Any organ of state that may have jurisdiction over any aspect of the operation or activity.
Pollution	Pollution means any change in the environment caused by - (i) substances; (ii) radioactive or other waves; or (iii) noise, odours, dust or heat, emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.

1 INTRODUCTION AND BACKGROUND

Tua Conserva Environmental & Conservation Services CC was appointed in 2006 to undertake an Environmental Impact Assessment (EIA) process for the proposed township development on portions 21, 23, 63 & 64 of the farm Vlakfontein 238 IQ, Project Ref no: Gaut 002/06-07/0361, and the Environmental Authorisation (EA), previously referred to Record of Decision (RoD) was subsequently granted in January 2008. However, the application was withdrawn by the applicant in 2009 with the Council due to the changes envisaged to the proposed development and the EA has since lapsed.

One of the land owners, Mr. Antonio Cremona, involved in the application mentioned above would now like to submit a new application for a new proposed mixed business and residential development within the property Portion 64 of Farm Vlakfontein 238 IQ. The applicant owns the property from which the proposed development is envisaged.

The specialist studies below were undertaken in 2006/7 and were submitted to the Gauteng Department of Agriculture and Rural Development (GDARD) previously referred to Department of Agriculture, conservation and Environment (GDACE) for decision making:

- Heritage Impact Assessment;
- Geotechnical Studies;
- Traffic Impact Assessment; and
- Invertebrates Impact Assessment.

The specialist studies indicated that there was no significant threat to the environment as a result of the proposed development. The proposed site has largely degraded over the years owed to surrounding residential areas and human activities. The area is criss-crossed by footpaths and motor vehicle tracts and on site visit there was movement of people across the site. Several areas are used as informal 'sporting grounds' by the neighbouring communities, whereas on several patches of other areas, the communities grow maize. There are no indigenous trees on the site, but exotic trees are common. A substantial area is covered with kikuyu grassland and invasive alien weeds. There is also fairly heavy littering on the site, which include discarded clothing textile, cardboard, plastic as well as building rubble.

2 GENERAL OBJECTIVES AND PURPOSE OF EMPr

Mr Antonio Cremona (applicant) together with the contractors appointed to undertake the development activities will be required to:

- Manage and operate their activities with due care and diligence;
- Avoid and/or limit any adverse impacts they may have on the environment by the proper design and construction of the proposed development;
- Control predicted impacts that may occur so as to meet acceptable standards, both as a legal and a moral responsibility to the environment within which they operate; and

- Ensure transparency in their operation and environmental management of the site.

This Environmental Management Programme (EMPr) serves as a stand-alone document to be issued to and used by Antonio Cremona (applicant), the contractor/s, sub-consultants and project managers (PMs) /supervisors during the construction and operational phases of the project. By its very nature, the EMPr is a dynamic document and updating may be required over the life of the development.

3 DOCUMENT ROADMAP

The EMPr document has been structured and collated to conform to Section 19(4) read with Appendix 4 of the National Environmental Management Act 107 of 1998 (NEMA) (as amended) Environmental Impact Assessment (EIA) Regulation 2014. The relevant document parts which addresses each of the aspects provided in Appendix 4 of the NEMA EIA Regulation 2014 is provided in **Table 3-1**. This has been done to ensure that the Competent Authority (CA) (i.e. GDARD) is provided with a comprehensive document that can be translated into a working / dynamic document during the Construction and Operational Phases of the proposed project.

Table 3-1: Document Roadmap

Relevant regulation, stipulation or condition		Relevant Document Part
Appendix 4		
1. An EMPr must comply with section 24N of the Act and include-		
(a)	details of -	
	(i) the EAP who prepared the EMPr; and	Section 5
	(ii) the expertise of that EAP to prepare an EMPr, including curriculum vitae;	Section 5
(b)	a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 4
(c)	prepared map at an appropriate scale which superimpose 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;	Section 4
(d)	assessment description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	
	(i) Planning and design;	Section 10
	(ii) Pre-construction activities;	Section 10
	(iii) Construction activities	Section 10
	(iv) Rehabilitation of the environment after construction and where applicable post closure; and	Section 17
	(v) Where relevant, operational activities	Section 10
(e)	a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 10
(f)	a description of the proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to-	

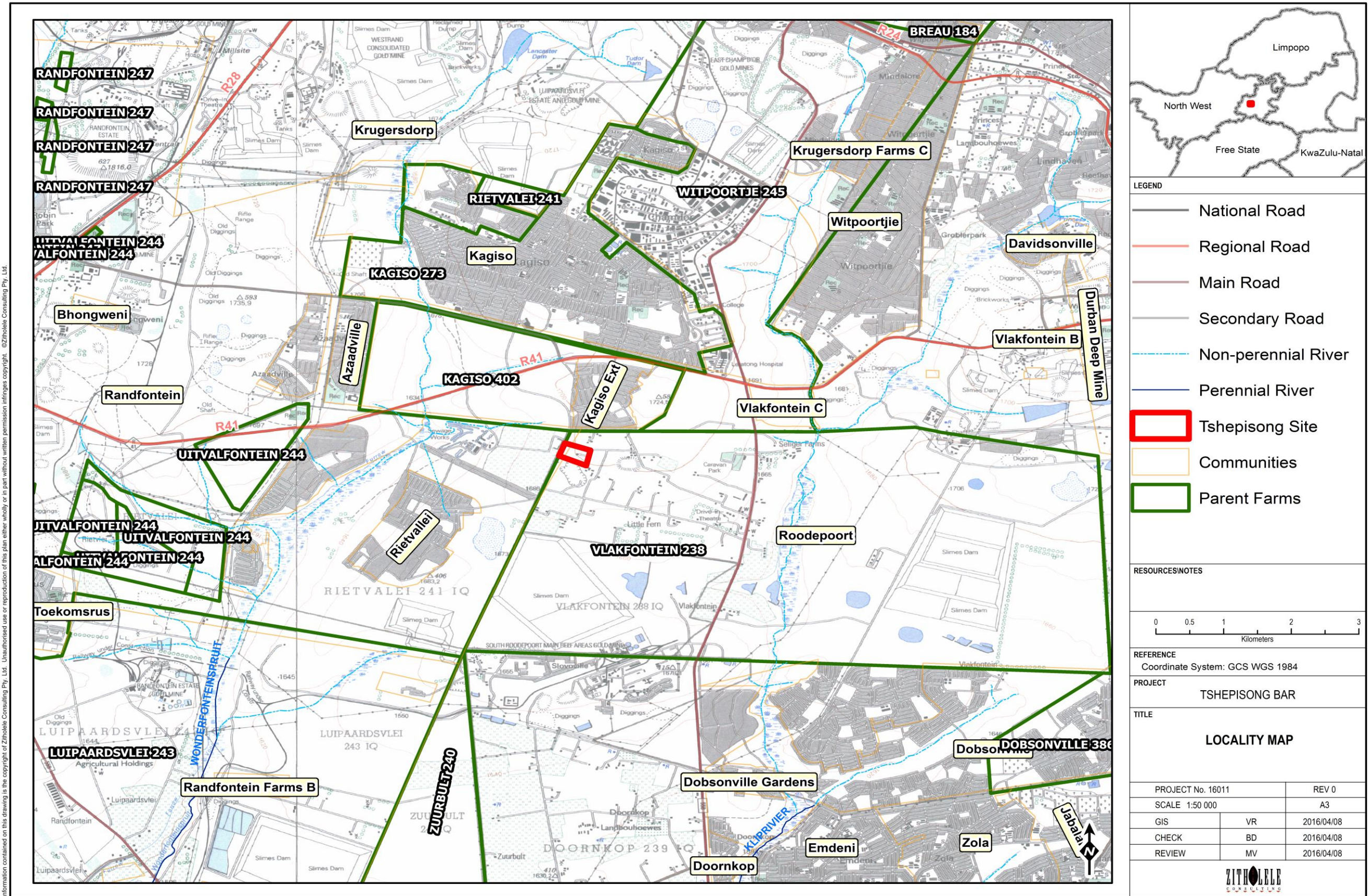
Relevant regulation, stipulation or condition		Relevant Document Part
(i)	Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	Section 10 & 15
(ii)	Comply with any prescribed environmental management standards or practices;	Section 7
(iii)	Comply with any applicable provisions of the Act regarding closure, where applicable; and	Not applicable
(iv)	Comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	Not applicable
(g)	the method of monitoring the implantation of the impact management actions contemplated in paragraph (f);	Section 10, 14, 15 & 16
(h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 15
(i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 9 & 15
(j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 15
(k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 11 & 15 & 16
(l)	a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 16
(m)	an environmental awareness plan prescribing 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	Section 13
(ii)	Risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 15
(n)	any specific information that may be required by the competent authority	Not Applicable

4 PROJECT DESCRIPTION

4.1 Study Area

The proposed project is located on farm Vlakfontein 238 IQ, portion 64 (**Centre Coordinates: 27°47'12.084"E, 26°11'6.295"S**) as stated above (Refer to **Figure 4-1** and **Figure 4-2**). The project site is a small open piece of land, located in Tshepising township, approximately 9 km west of Roodepoort, within the City of Johannesburg Metropolitan Municipality, Region C (Refer to **Figure 4-3**). Kagiso Avenue borders the site to the west, while low-cost and informal housing mark its northern and southern boundaries. Land immediately east of the site comprised of open disturbed grassland. Relative to the surrounding main places, the proposed development is located south of Krugersdorp, south-west of Roodepoort and east of Randfontein.

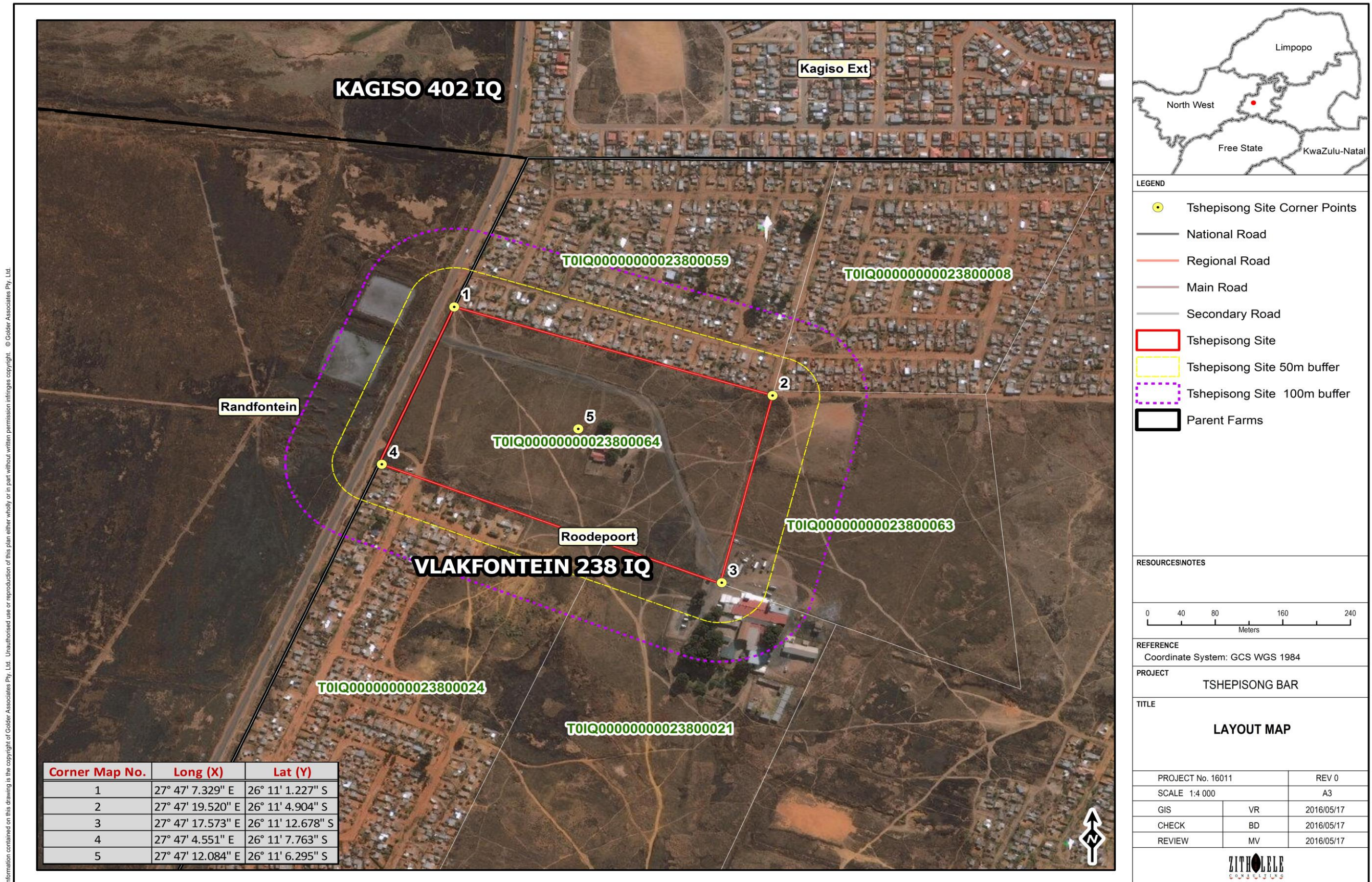
The study area falls inside the urban edge boundary and is approximately 8.6 hectares in extent. A residential building (house) is located in the centre on the site and is apparently used as a community facility. The house within the property is owned by the applicant (Mr Cremona) and is not older than 60 years. It is envisaged that it will be demolished to accommodate the proposed development with the property.



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Figure 4-1: Locality Map



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Figure 4-2: Layout Map

Limpopo

North West

Free State

KwaZulu-Natal

LEGEND

- Tshepisoong Site Corner Points
- National Road
- Regional Road
- Main Road
- Secondary Road
- Tshepisoong Site
- Tshepisoong Site 50m buffer
- Tshepisoong Site 100m buffer
- Parent Farms

RESOURCES/NOTES

0 40 80 160 240
Meters

REFERENCE
Coordinate System: GCS WGS 1984

PROJECT
TSHEPISOONG BAR

TITLE
LAYOUT MAP

PROJECT No. 16011	REV 0
SCALE 1:4 000	A3
GIS	VR 2016/05/17
CHECK	BD 2016/05/17
REVIEW	MV 2016/05/17

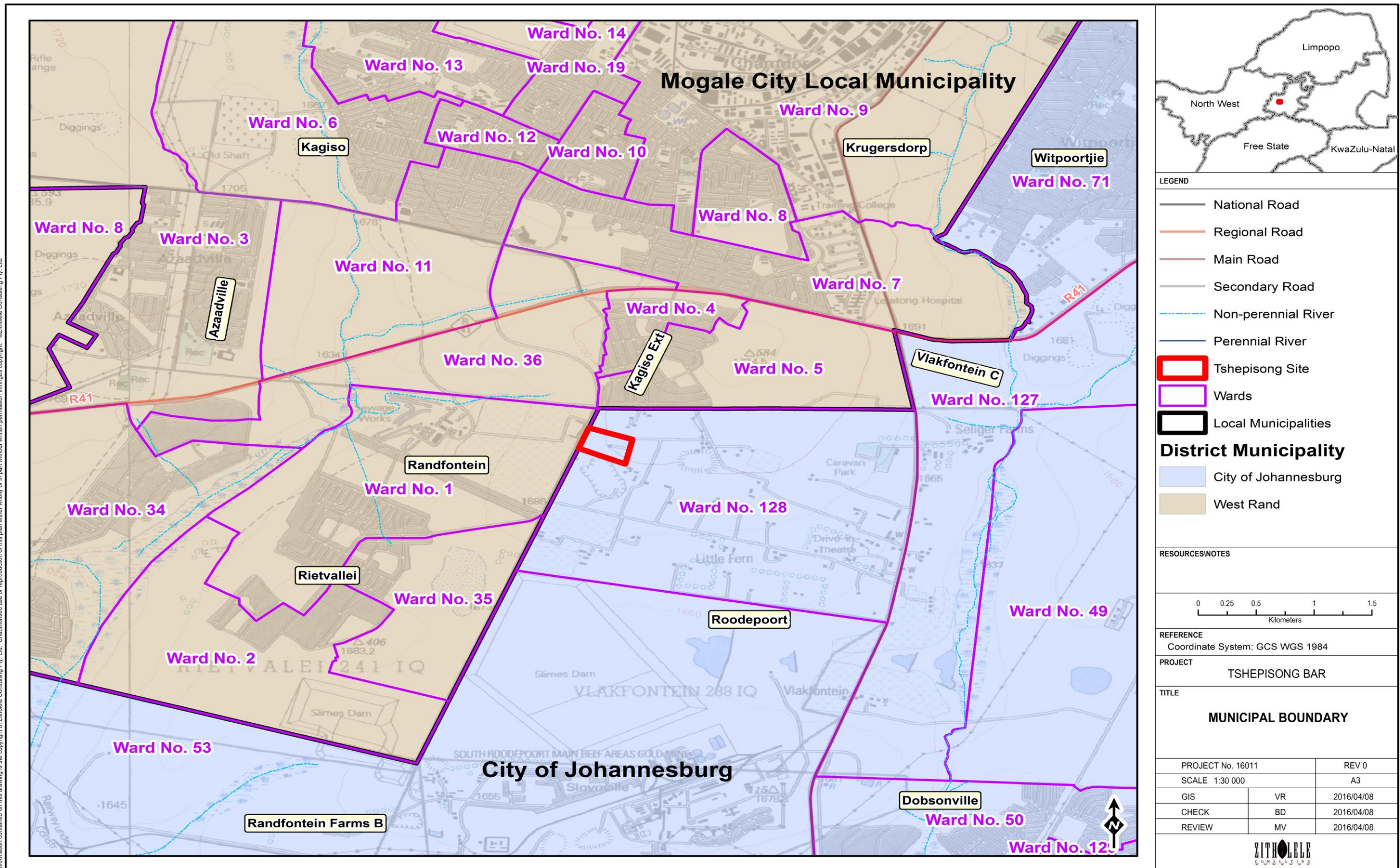


Figure 4-3: Municipal Boundary Map

4.2 Project Activities

The proposed development will include the establishment of a mixed business (retail and associated uses) and residential development for the middle income group (Refer to **Table 4-1** for the summary of proposed project's activities).

Table 4-1: Summary of the proposed project's activities

Use	No of Erven	Area (ha)/Length (m)	% OF Township	ERF No.
Residential 1	139	3, 2000	37,36	2 -140
Business 1	1	3,0938	36,12	1
Public Open Space	1	0,3453	4,03	141
Street/Road		1,9262	22,49	
Total	141	8.5653	100	

The proposed development is situated within easy reach from major routes and close to other many amenities. The following support service or activities are proposed:

- **Existing building:** demolishing of the existing building in the center of the proposed site.
- **Roads:** It is proposed that a new access road that serves both the business as well as the residential area be constructed off Kagiso Avenue (proposed street/road name: Cremona Drive). The location of this road has a dual purpose in also providing access to the current informal settlement located on Portion 24 of the farm Vlakfontein, which currently gains access off Kagiso Avenue over the property via a dirt road. This connection will prevent traffic build up at the entrance point. The access road joins with a circular ring road. This ring road will have a width of 6.5m. Linked to this ring road is a collector road of 5.5m which will serve the local streets of 5m wide. The development will generate a traffic flow in excess of 2000 vehicles per day which warrants a traffic light intersection at the junction with Kagiso Avenue. All roads will have a bituminous wearing course with mountable kerbstone giving easy access to the houses.

Several 13m wide residential roads (Class 5) give access to the proposed 139 residential erven with a ruling stand size of 200m², as the current target market finds this erf size favourable. An access road on the eastern boundary has been provided to Portion 63 of that farm Vlakfontein for potential future development.

- **Electricity:** Electricity infrastructure will include internal residential electricity distribution to the business site and residential units. It is expected that electricity to the site and for the proposed development will be provided by Eskom.
- **Potable Water Reticulation:** The average water demand for the development was calculated at 6.54litres per second which includes a 10% loss rate, with a peak flow of 29.43litres per second envisioned. The fire water demand requires 25 liters per second flow rate with a minimum residual head of 15m. The distances of the hydrants are placed to be not more than 180m apart. A minimum pipe diameter of 75mm is used for the internal reticulation, while the bulk supply pipe to the area is 160mm. The development will connect to bulk potable water infrastructure of Johannesburg Water.
- **Sewer Reticulation:** Johannesburg Water has indicated that whilst there is no connection to the township situated adjacent to the proposed development, connection can be made into the existing infrastructure in the area.

- **Storm water:** The storm water reticulation system is designed for a flood return period of 5 years. All kerb inlets are designed to connect 80% of the passing water with the exception of the low points where 100% will be collected. The storm water reticulation consists of pipes (100m in length) with diameters ranging from 450mm to 900mm, connecting from the attenuation pond to discharge on to the existing road reserve on Kagiso Avenue. The proposed pond will be located at the lowest point of the site, which is to the south of the development (refer to **Appendix B**). The site slopes gradually from north east to south-west portion (lower area) of the site and storm water / surface runoff will be attenuated at the lowest point on the south-eastern corner of the site through an attenuation pond of 363m³ (22m length x 11m width x 1.5m height). All storm water runoff will eventually report to the Driefontein. The discharge of the storm water will comply with the Johannesburg Road Agency (JRA) standards (JRA-SD-S003) and will be maintained by the JRA. The proposed attenuation pond will be grassed and fenced.
- **Solid Waste Management:** Solid waste management within the development site during construction and operational phases will conform to the principles of the National Waste Management Strategy and Waste Management Hierarchy. General waste remaining after avoidance, re-use and recycling have been completed will be stored temporarily (less than 90 days at any one time) on site before removed by a credible service provider. General waste volumes of not more than 15m³ per month will be generated within the development footprint and as such does not trigger the need for a Waste Management Licence. The site will be serviced by the City of Johannesburg.
- **Storm Water Drainage:** The design of the road network will promote the affective drainage of rain water, where storm drainage and pipelines is required necessary servitudes would be incorporated.

4.3 Existing services or facilities

Potable Water: The bulk supplier of water in this region is Rand Water. A 324 mm south Roodepoort steel pipeline and a 4 metre wide Rand Water servitude by Deed of Servitude K170/1989 is located on the property's western boundary, however it will not affect the proposed development. Johannesburg Water would provide connection points into current service network or alternatives will be proposed.

Sewer: The property falls within the Driefontein Sewer Works catchment area. It is proposed that the proposed development's reticulation is a full waterborne system. The sewer pipes would be installed in the road reserves.

Electricity: City Power is the main distributor of electricity for this area. The property is encumbered by Eskom 22kVA overhead power lines located on the northern, western and the southern boundary, as will more fully appear on the proposed layout plan. Although connecting to the City Power grid is favourable, a green option of solar panels on the roofs of the houses would alleviate the constraint on the supplier and will be investigated for feasibility.

Roads: The property gains current access off Kagiso Avenue, which in turn intersects with Randfontein Road (R41) approximately 1500 m north from the property. Randfontein Road is an east-west corridor route identified by Mogale City for development. This Class 2 Mobility

Spine intersects with a north-west Mobility Spine, known as the R558 (Adcock Street) which currently provides Tshepisoong with proper access.

Servitudes, which affect the property are as follows: The registered deed of transfer reserves a servitude as “a roadway” of 9,45 meters wide along the eastern boundary in favour of portion 21 of the same farm. The property is further affected by three servitudes in favour of Eskom on the northern, western and southern boundaries, each 18m wide.

4.4 Description of Project Component

4.4.1 Pre-Construction and Construction process for the proposed development

The construction of the proposed development will be undertaken in the following steps:

- Undertaking and completion of proposed development concept;
- Undertaking Environmental Authorisation application and environmental impact assessment process;
- Pre-Construction site work, such as geotechnical investigations;
- Undertaking of and compliance with pre-construction activities and conditions in terms of the Environmental Authorisation;
- Site preparation (Vegetation clearance);
- Demolishing of the existing building;
- Civil work and civil construction: Casting of new foundations and plinths for the proposed development;
- Construction of the residential and business units and associated infrastructures (roads, open spaces area);
- Construction and/or installation of water supply, sewer reticulation and storm water management infrastructure; and
- Testing and commissioning.

The construction phase for the proposed project will take approximately 5 years.

4.4.2 Operational activities

During the operational and maintenance phase of the project, the applicant will ensure that operation and maintenance activities are carried out by suitable qualified individual as the activities are specialised. For the activities to be carried out during operational phase refer to project activities discussed above.

4.4.3 Decommissioning activities

Decommissioning of the proposed activities is neither envisioned nor feasible as this would result in loss of housing (shelter) and social impacts through fragmentation of communities.

5 DETAILS AND EXPERTISE OF ENVIRONMENTAL ASSESSMENT PRACTITIONER

In terms of the National Environmental Management Act, (Act 107 of 1998) as amended (NEMA) and EIA Regulations (2014), the proponent/developer must appoint an Environmental Assessment Practitioner (EAP) to undertake a BA and/or Public Participation Process (PPP) for listed activities regulated in terms of the aforementioned act. In this regard, Antonio Cremona has appointed Zitholele Consulting (Pty) Ltd as the EAP on this project to undertake the BA process for the proposed project, in accordance with the aforementioned regulations.

Zitholele is an empowerment company formed to provide specialist consulting services primarily to the public sector in the fields of Water Engineering, Integrated Water Resource Management, Environmental and Waste Services, Communication (public participation and awareness creation) and Livelihoods and Economic Development.

Zitholele Consulting has no vested interest in the proposed project and hereby declares its independence as required by the EIA Regulations (2014).

This EMP report has been compiled by the following persons who have the relevant expertise and experience in environmental management (see attached CV in **Appendix A**):

Table 5-1: Details of EAP on this project

Project Manager and EAP:	Virginia Ramakuwela
Company Represented:	Zitholele Consulting (Pty) Ltd
Professional affiliation/registration:	SACNASP Registered – Registration number: 100150/14 PLATO Registered – Registration number: GT1494
Physical address:	Building 1, Maxwell Office Park, Magwa Crescent West, cnr Allandale Road & Maxwell Drive, Waterfall City, Midrand, 1685
Postal address:	PO Box 6002, Halfway House, 1685
Telephone:	011 207 2060
Fax	086 676 9950
E-mail:	mail@zitholele.co.za

Virginia Ramakuwela is the designated PM on behalf of Zitholele. Virginia will ensure regulatory compliance, quality assurance and overseeing the Technical Environmental Team. Virginia holds a BSc. (Hons) degree in Environmental Analysis & Management from the University of Pretoria (2010). She is registered as a Candidate Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP), (Cand. Sci. Nat. 100150/14) as well as the South African Council for Professional and Technical Surveyors (PLATO) as a GISc Technician (GT1494). Virginia is also a member of the International Association for Impact Assessments (IAIA), National Association for Clean Air (NACA) and Geo-Information Society of South Africa (GISSA).

Virginia has in excess of 3.5 years' experience in environmental consulting, Environmental Management and Environmental Impacts Assessment processes in South Africa. Her

experience spans both the public and private sector. She is ideally skilled and experienced to manage this project to its conclusion.

Virginia is working under the supervision of an experienced Senior EAP, Dr. Mathys Vosloo. Dr. Mathys Vosloo is a well-qualified and technically proficient environmental and natural scientist with over 12 years in environmental management and consulting experience. He is a registered professional natural scientist (Pr.Sci.Nat.) with the SACNASP. His experience ranges from EIA and Strategic Environmental Assessment services to project management and State of the Environment Reporting. Mathys has done numerous projects in the power generation, linear infrastructure and infrastructure development industries.

6 DETAILS OF PROJECT PROPONENT

The details of the project proponent/Developer are provided in **Table 6-1** below.

Table 6-1: Proponent's details

Applicant name:	Antonio Cremona
Company Registration number:	N/A
Contact person:	Claudette Denner
Responsible position:	Town Developer / Landowner
Physical address:	21 Prospect Rd, Roodepoort, 1734
Postal address:	P.O Box 8364 Birchleigh 1621
Telephone:	011 948 9949/50
Cell:	083 644 6729
Fax:	086 553 9977
E-mail:	toplan@mweb.co.za

7 LEGISLATIVE FRAMEWORK

7.1 Legislative Requirements for the EMPr

In terms of Section 19(4) read with Appendix 4 of the Environmental Impact Assessment Regulations, 2014 (EIA Regulations); the EMPr must comply with Section 24N of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended and include.

The implementation of the EMPr for the proposed activity is a requirement by the NEMA EIA Regulations (2014) and is likely to similarly be a condition in the Environmental Authorisation (assuming such), issued by the GDARD. As such, failure to comply with this EMPr will constitute an offence and the client and their Contractor may be liable to penalties and/or legal action. Therefore, it is important for all the responsible parties to understand their duties and undertake them with duty and care.

7.2 Other Applicable Legislation

The client is responsible for compliance with the provisions for duty of care and remediation of damage in accordance with Section 28 of NEMA and its obligations regarding the control of emergency incidents in terms of Section 30 of NEMA. Accordingly, the GDARD must immediately be notified of an incident as defined in subsection 30(1) (a) of NEMA.

Various environmental legislation and policies relate to the proposed activities, including the following listed in **Table 7-1**.

Table 7-1: List of Applicable Legislation

Title of legislation, policy or guideline:	Applicability to the Project	Administering authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended) (NEMA).	The NEMA (as amended) is regarded as South Africa's environmental framework legislation which provides for environmental management and gives effect to section 24 of the Constitution. The BA and Public Participation processes were undertaken in strict compliance with the NEMA, as amended.	National & Provincial	27 November 1998
The Constitution of the Republic of South Africa (Act 106 of 1998)	Section 24 of the Constitution of the Republic of South Africa provides for a comprehensive environmental right. Therefore, stakeholders and Interested and Affected Parties may exercise their right through providing comment during the PP process and raising issues of concern that are likely to infringe upon their environmental right. The BA process recognises this right and the EAP has recorded, considered and responded to any and all issues of concern raised by the I&APs.	The Judiciary	18 December 1996
Social Housing Act of No 16 of 2008	To give priority to the needs of low and medium income households in respect of social housing development.	Department of Human Settlements (DHS)	5 November 2008
NEMA Environmental Impact Assessment (EIA) Regulations 2014 (published in Government Notice No. R.982)	The Basic Assessment (BA) Process for the proposed project has been carried out in accordance with the Regulations 19 and 20 of the NEMA EIA Regulations, 2014.	GDARD	4 December 2014
NEMA Listing Notice 1: List of activities and Competent Authorities identified in terms of Sections 24(2) and 24D (published in Government Notice No. R.983)	The proposed project activities trigger activities which are listed in Listing Notice 1. EA is therefore required before these activities may be implemented.	GDARD	4 December 2014
National Water Act 36 of 1998 (NWA)	The proposed project has considered the following: Section 19: prevention and remedying the	Department of Water and Sanitation (DWS)	20 August 1998

Title of legislation, policy or guideline:	Applicability to the Project	Administering authority:	Promulgation Date:
	<p>effects of pollution;</p> <p>Section 20: control of emergency incidence; and</p> <p>Chapter 4: use of water and licensing.</p> <p>This BA Process has considered such potential impacts and/or incidences.</p>		
Water Service Act 108 of 1997	The provision of water services for the proposed project will be required. This BA Process has taken this into account.	Department of Water and Sanitation (DWS)	19 December 1997
National Environmental Management Waste Act 59 of 2008 (as amended) (NEMWA), National Norms and standards for the Storage of Waste (GNR.926 of 29 November 2013)	All requirements / provision concerning waste producing activities and the handling of waste, as provided in the NEMWA and the regulations thereunder must be conformed to. The quantity of general waste that will be temporarily be stored at the construction site is anticipated to be less than 100 m3. In the event that more than 100 m3 of waste is stored at any one time, the developer must comply with the National Norms and standards for the Storage of Waste.	GDARD	10 March 2009 29 November 2013
National Environmental Management: Biodiversity Act 10 of 2004	The National Environmental Management: Biodiversity Act 10 of 2004 is aimed at providing for the management and conservation of South Africa's biodiversity within the framework of the NEMA. All reasonable measures will be taken to ensure the conservation of the biodiversity within proposed project area.	GDARD	7 June 2004
National Heritage Resources Act 25 of 1999	Whilst studies undertaken in 2006 and 2016 reveals that, there are no significant heritage artifacts that would be impacted, however provisions in the NHRA relating to the protection and management of heritage resources applies to the proposed project.	The South African Heritage Resources Agency	28 April 1999
Promotion of Access to Information Act 2 of 2000 (PAIA)	As per the NEMA EIA Regulations, 2014, as well as the principles/objectives of the PAIA, the Basic Assessment Report (BAR) as well as all supporting documentation (e.g. specialist studies) will be made available to the public.	GDARD	9 March 2001
Occupational Health and Safety Act 85 of 1993	This is primarily intended to provide for the health and safety of persons at work and for the health and safety of persons in connection with the activities of persons at work. All work that is carried out for the implementation of the project activities as well as during each phase of the project lifecycle should be carried out in accordance with the provisions of the OHS Act	Provincial Department of Labour.	23 June 1993
Integrated Environmental Management Guideline Series (Guideline 5) Companion to the EIA	The aim of the guideline is to provide a detailed consideration of the practical implementation of the NEMA EIA Regulations. The guideline also provides guidance and clarity on the EA Process to be followed and	National Provincial and	10 October 2012

Title of legislation, policy or guideline:	Applicability to the Project	Administering authority:	Promulgation Date:
Regulations 2010 published in Government Notice 805	interpretation of the listed activities. The guideline was used as a reference document to the applicability of the NEMA EIA Regulations, 2014 on the proposed project.		
Integrated Environmental Management Guideline Series (Guideline 7) Public Participation in the EIA Process published in Government Notice 805	The guideline is intended to provide information on the benefits of public participation, the minimum legal requirements for the Public Participation Process (PPP), the steps of the PPP, guidelines for planning a PPP and a description of the roles and responsibilities of the various role-players. The guideline was referred to, to facilitate an adequate understanding of the execution of the PPP.	National Provincial and	10 October 2012
Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism	The guideline aims to provide a generic introductory information source on the purpose, objectives and content of Environmental Management Plans.	National Provincial and	2004
DWS Integrated Environmental Management Series: Environmental best practice Guidelines For Water Supply and Water Resource Infrastructure: Planning, Operation, Construction and Decommissioning.	This guideline is a generic environmental best practice manual for use during the planning, operation, construction and decommissioning phases of Water Supply and Water Resource Infrastructure.	DWS	3 February 2005
Gauteng Provincial Environmental Management Framework	The objective of the GPEMF is to guide sustainable land use management within the Gauteng Province.	GDARD	2014
Applicable by-laws of the City of Johannesburg Metropolitan Municipality.	A by-law is considered as piece of legislation that is specific to the municipal area of jurisdiction. By-laws are intended to regulate the affairs and the services it provides within the municipal boundaries. A by-law is passed by the Council of a municipality.	City of Johannesburg Metropolitan Municipality	-
National Housing Code, 2009	Provide guidelines with regard to financial, incremental, social and rental interventions and other housing related programmes.	Department of Human Settlements (DHS)	2009

7.3 List of activities associated with the project

The activities that are associated with the proposed project trigger activities listed in Government Notice No. R.983 (2014). As set out in Regulations 19 of the National Environmental Management Act (NEMA) Environmental Impact Assessment Regulations,

2014, the proposed project is subjected to a BA Process (Government Notice No. R.982). Mr. Cremona has therefore appointed Zitholele Consulting (Pty) Ltd as the independent EAP to undertake the BA Process for the proposed project.

The BAR will be submitted to the GDARD for licensing of the listed activity triggered as indicated in **Table 7-2** below:

Table 7-2: Detailed description of the listed activity associated with the project

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices:
GN 983, 08 Dec 2014	Activity 27 (Listing Notice 1)	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation
GN 983, 08 Dec 2014	Activity 28 (Listing Notice 1)	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development: (i) Will occur inside an urban area, where the total land to be developed is bigger than 5 hectares.
GN 983, 08 Dec 2014	Activity 31 (Listing Notice 1)	The decommissioning of existing facilities, structures or infrastructure for- (ii) Any development and related operation activity or activities listed in this Notice.

8 ORGANISATION STRUCTURE

The organisational structure identifies and defines the responsibilities and authority of the various role-players (individuals and organisations) involved in the project. All instructions and official communications regarding environmental matters shall follow the organisational structure shown in **Figure 8-1** below.

The organisational structure reflected in **Figure 8-1** has been developed to ensure that:

- There are clear channels of communication;
- There is an explicit organisational hierarchy for the integration project; and
- Potential conflicting or contradictory instructions are avoided.

In terms of the defined organisational structure reflected in **Figure 8-1** below, all instructions that relate to environmental matters will be communicated to the Contractor via the Environmental Officer (EO). The only exception to this rule would be in an emergency situation. An emergency is defined as a situation requiring immediate action and where failure to intervene timeously would, in the reasonable opinion of the Environmental Control Officer (ECO), result in unacceptable environmental degradation. In emergency situations

instructions may be given directly to the Contractor. The detailed roles and responsibilities of the various role-players identified in the organisational structure are outlined in **Section 9**.

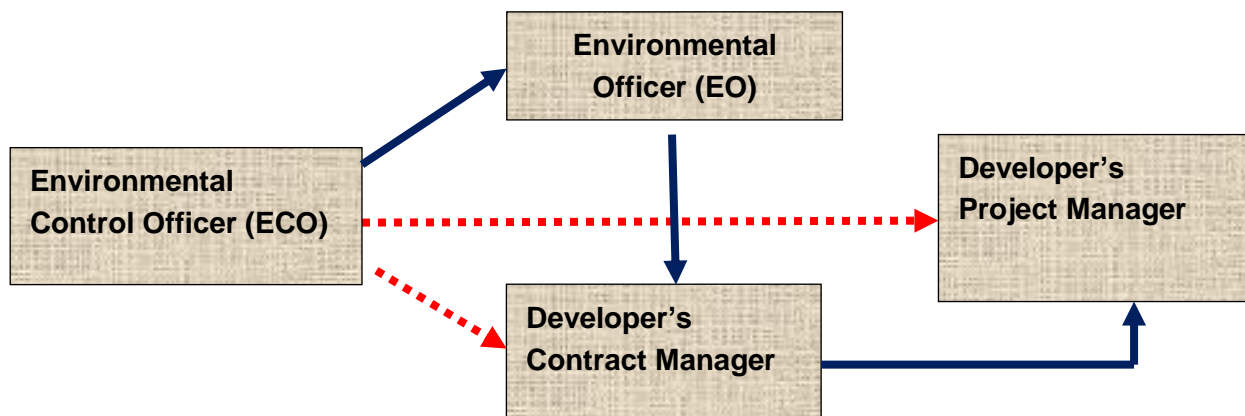


Figure 8-1: Organisation Structure for Environmental Reporting

9 ENVIRONMENTAL ROLES AND RESPONSIBILITIES

The key-role-players for the integration project are the GDARD, the Developer (Mr. Cremona), the ECO and the Contractor. The detailed roles and responsibilities of each of these organisations are outlined below.

9.1 Gauteng Department of Agriculture and Rural Development

As the CA, the GDARD has the responsibility to ensure that the developer complies with the conditions of the EA for this proposed project (once received) as well as the requirements of the broader environmental legislation, specifically the NEMA. Compliance would be confirmed via the following mechanisms:

- Receipt and review of the environmental reporting required in terms of the EA; and
- *Ad hoc* and planned site inspection by the GDARD Compliance and Enforcement.

The successful implementation of this EMP requires cooperation between the developer, the appointed project management consultant, the appointed contractors and the appointed ECO.

9.2 General roles and responsibilities

General roles and responsibilities have been outlined below (**Table 9-1**) and the project team are required to comply with the conditions defined herein.

Table 9-1: Roles and Responsibilities

Responsible Agent	Role/Responsibility
Developer	<p>Antonio Cremona as the Project Developer has overall responsibility for ensuring that its operations are undertaken in an environmentally sound and responsible manner, and in particular, reflects the requirements and specifications of the EMPr and recommendations from the relevant authorities.</p> <p>The responsibilities of the Project Developer will be to:</p> <ul style="list-style-type: none"> • appoint or designate a suitably qualified PM to manage the implementation of the proposed development; • Establish and maintain regular and proactive communications with the designated/ appointed PM, Contractor(s) and ECO; and • Ensure that the EMPr is reviewed and updated as necessary. <p><u>Reporting Structure:</u></p> <p>The Developer will liaise with and/or take instruction from the following:</p> <ul style="list-style-type: none"> • Authorities; • ECO; and • General Public.
ECO	<p>ECO should be a suitably qualified person and should:</p> <ul style="list-style-type: none"> • Ensure that contractors receive copies of the EMPr, Environmental Authorisation and all agreed Method Statements; • Provide on-site guidance, surveillance and reporting commensurate with the project phase/progress; • Undertake frequent site visits and record key findings. This includes photographic monitoring of the construction site and an evaluation of the implementation, effectiveness and level of compliance of on-site construction activities with the EMPr and associated plans and procedures; • Attend monthly project meetings; • Instruct EO or Contract Manager or Antonio Cremona's appointed PM on actions or issues impacting on the environment and provide appropriate site instructions to address and rectify these matters; • Record and provide written documentation of non-conformances with the EMPr and require Antonio Cremona to undertake mitigation measures to avoid or minimise any adverse impacts on the environment or report required changes to the EMPr; • Review corrective and preventative actions to ensure implementation of recommendations made from audits and site inspections; • Order the Contractor to suspend part or all of the works if the Contractor and/or any sub-contractors, suppliers, etc. fail to comply with any aspect of either the EMPr or EA; • Identify possible areas of improvement; • Ongoing assessment of the suitability or effectiveness of the EMPr and make concomitant recommendations; • Submit monthly environmental audit reports to GDARD (or as per conditions of EA) during the construction phase; • Monitor and record the processing of public complaints and their resolution relating to the construction activities; and • Ensure that updates to the EMPr (as necessary) are implemented.
Construction Contractor (CC) /	The Construction Contractor must:

Responsible Agent	Role/Responsibility
Appointed EO	<ul style="list-style-type: none"> • Appoint a EO to interpret the EA and EMPr on behalf of the Construction Contractor <i>inter alia</i> to ensure appropriate environmental awareness and training to achieve conditions of the EA and EMPr; • Ensure that all construction staff, sub-contractors, suppliers, etc. are familiar with, understand and adhere to the EMPr, EA and all agreed Method Statements (Environmental Awareness Plan) per their job function; • Ensure that all facets of the work undertaken are properly and competently directed, guided and executed during construction according to the EMPr; • Ensure construction of the facility to contractual environmental specifications; and • Adherence to laws and standards relevant to the construction of the facility.
PM	<p>The primary role of the PM will to ensure that the Contractor and Developer comply with the environmental specifications in the EMPr. The PM shall further:</p> <ul style="list-style-type: none"> • Oversee the general compliance of the Contractor with the EMPr and other pertinent site specifications; and • Liaise between and with the Contractor (including EO) and ECO on environmental matters, as well as any pertinent engineering matters where these may have environmental consequences. <p>In addition, the PM shall:</p> <ul style="list-style-type: none"> • Designate or appoint a suitably qualified Environmental Manager (EM) that will manage all environmental aspects on behalf of the PM and the Developer; • Assume overall responsibility for the effective implementation and administration of the EMPr; • Be familiar with the contents of the EMPr, and his role and responsibilities as defined herein; • Ensure that the EMPr is included in the Contractor's contract; • Communicate to the Contractor, verbally and in writing, the advice of the ECO and the contents of the ECO reports; • In conjunction with the EO; undertake regular inspections of the Contractor's site as well as the installation works in order to check for compliance with the EMPr in terms of the specifications outlined therein. Inspections shall take place at least once a week during construction and copies of the weekly monitoring checklist will be contained in the file; • Issue site instructions giving effect to the ECO requirements where necessary; • Keep a register of all complaints and incidents (spills, injuries, complaints, legal transgressions, etc.) and other documentation related to the EMPr; • Report to the ECO any problems (or complaints) which cannot first be resolved in co-operation with the Contractor(s); • Implement recommendations of possible audits; • Implement Temporary Work Stoppages as advised by the ECO, where serious environmental infringements and non-compliances have occurred;

Responsible Agent	Role/Responsibility
	<ul style="list-style-type: none"> • Facilitate proactive communication between all role-players in the interests of effective environmental management; and • Ensure that construction staff is trained in accordance with requirements of the EMPr. <p><u>Reporting Structure:</u> The PM will report to the Developer, as and when required.</p>

10 ENVIRONMENTAL ISSUES IDENTIFIED

The proposed site of the project has largely degraded due to various anthropogenic activities. No major environmental issues have been identified to occur as a result of the proposed establishment of mixed business and residential development besides the traffic issues. However, the proposed development will undertake to construct a public street/road to mitigate this issue. A summary of the anticipated environmental impacts associated with each of the project lifecycle phases of the proposed project that were identified during the BA Process is presented in **Table 10-1**, **Table 10-2** and Table 10-3.

Table 10-1: Summary of Pre-Construction and Construction Phase Impacts

Id.	Impact	Description	Nature of Impact (Negative / Positive)	Management Objective / Principle	Level of Mitigation
Pre-Construction and Construction Phase					
1.	Economic benefit to local economy	Appointment of construction contractor	Positive	Ensure that the local communities benefit from employment opportunities that are generated during the Construction Phase.	Enhance the local economy.
2.	Dust nuisance	Construction activities associated with the vegetation clearance / site preparation and movement of the construction vehicle over the bare soil for the proposed establishment of mixed use business and residential development.	Negative	It must be ensured that the volumes of dust generated by the site preparations and associated construction activities do not exceed the National Ambient Air Quality Standards and Minimum Emissions Standards and may not result in any adverse impacts on human health. Dust suppression during movement of vehicles must be undertaken when necessary. In addition, to ensure that no complaints raised by Interested and Affected Parties (I&APs) relating specifically to the impacts of increased or unacceptable dust levels associated with the proposed project.	Prevent the impact from transpiring.
3.	Possible sedimentation from uncovered areas	Exposure of soil or bare areas due to site preparations and associated construction activities for the proposed project may lead to possible sedimentation within the proposed site. Sediment runoff from construction areas will result in elevated levels suspended solids in nearby watercourses. However, there are no watercourses identified within 500m of the proposed site.	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the characteristics of the watercourses associated with the development area.	Minimise the extent of the impact.
4.	Loss of ecological integrity and natural habitats	The existing (current) increased human presence, movement of the vehicles and people within the area have largely impacted the proposed site. In fact, the ecological desktop assessment revealed that from the biodiversity scan over the site, there are little to no existing ecological integrity and natural habitats. However, construction activities within the site may cause loss of the little ecological integrity and natural	Negative	No harm may be caused to the animal and plant life by the execution of any construction and / or related activity. Furthermore, no disturbance to or loss of protected flora species outside of construction footprint / working area should be caused.	Prevent the impact from transpiring to the vicinity areas.

Id.	Impact	Description	Nature of Impact (Negative / Positive)	Management Objective / Principle	Level of Mitigation
Pre-Construction and Construction Phase					
		habitats that may still exist within the proximity of the proposed site. Furthermore, the aforementioned factors also represent possible sources of harm to fauna and flora found within the vicinity (adjacent) of development footprint.			
5.	Vehicle traffic congestion	Slow moving construction vehicles and vehicles delivering the construction materials to the development footprint may cause an addition in traffic congestion in the area. However, the proposed development intends to construct additional road to reduce the possibility of this impact and also to connect the development area to the existing main road.	Negative	Ensure the implementation of all reasonable management measures to reduce the significance of the impact on the traffic congestion in the area. In addition, to ensure that no complaints raised by I&APs relating specifically to the impacts of traffic congestion associated with the proposed project.	Minimise the extent of the impact.
6.	Land/soil pollution from chemical / hydrocarbon spills, litter and waste metals.	Construction activities on site may result in pollution of soils by cement spills, litter, waste metals, hydrocarbons and chemicals. Furthermore, the inappropriate storage and disposal of solid waste will result in environmental pollution.	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the characteristics of the watercourses associated with the development area. In addition, The adoption of the waste management hierarchy will result in continual reduced volumes of waste being generated and disposed of at an appropriate, registered landfill site.	Prevent the impact from transpiring.
7.	Pollution may enter ground / surface water	The nature of the activities to be carried out during construction of the proposed development may affect the water resources.	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the characteristics of the watercourses associated with the development area.	Prevent the impact from transpiring.
8.	Fugitive dust emissions (Health impact)	The movement of construction vehicles across bare soil surfaces and the exhaust fumes gaseous pollutants (e.g. sulphur dioxide) released from vehicle exhausts will alter the ambient air quality of the immediate area. High wind speeds are likely to generate dust particles from topsoil.	Negative	It must be ensured that the volumes of dust generated by the site preparations and associated construction activities do not exceed the National Ambient Air Quality Standards and Minimum Emissions Standards and may not result in any adverse impacts on human health. Dust suppression during movement of vehicles must be undertaken when necessary. In addition, no complaints raised by Interested and Affected Parties (I&APs) relating specifically to the impacts of increased or unacceptable dust levels associated with the proposed	Prevent the impact from transpiring.

Id.	Impact	Description	Nature of Impact (Negative / Positive)	Management Objective / Principle	Level of Mitigation
Pre-Construction and Construction Phase					
				project.	
9.	Erosion and loss of soil resources	All bare and exposed areas will be vulnerable to erosion.	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the characteristics of the watercourses associated with the development area.	None required.
10.	Increased noise	The movement of construction activities, construction vehicles and heavy machinery as well as construction personnel will alter the ambient noise levels in the area.	Negative	It must be ensured that the noise levels generated by the site preparations and associated construction activities should be maintained and be in accordance with the municipal bylaws. Increased noise levels must be maintained below levels which will be audible by the surrounding receptors. In addition, no complaints raised by Interested and Affected Parties (I&APs) relating specifically to the impacts of increased or unacceptable noise levels associated with the proposed project.	Minimise extent of impact.
11.	Sedimentation, siltation, and increased turbidity in surface water	All bare and exposed areas will be vulnerable to erosion.	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the characteristics of the watercourses associated with the development area.	Reduce the extent of the impact.
12.	Impact on heritage resources	Construction activities on site including clearing of vegetation and excavations may impact on heritage resources such old graves.	Negative	No disturbance to or damaging sites of heritage importance.	Prevent the impact from transpiring.
13.	Uncontrolled activities may lead to fires	Ignition of veld due to use of certain equipment.	Negative	Regular inspections and maintenance to ensure that no fires transpire on site.	Reduce the extent of the impact.

Table 10-2: Summary of Operational Phase Impacts

Id.	Impact	Description	Nature of Impact (Negative / Positive)	Management Objective / Principle	Level of Mitigation
Operational Phase					
1.	Pollution from litter, waste metals, vehicle spills / hydrocarbon spills during maintenance activities	Operational activities on site may result in pollution from litter, waste metals, vehicle spills / hydrocarbon spills during maintenance activities. Further, The inappropriate storage and disposal of solid waste will result in environmental pollution.	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the characteristics of the watercourses associated with the development area. In addition, The adoption of the waste management hierarchy will result in continual reduced volumes of waste being generated and disposed of at an appropriate, registered landfill site..	Prevent the impact from transpiring.
2.	Pollution may enter ground / surface water	Maintenance of the building and other infrastructures may result in impact on the surface or groundwater.	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the characteristics of the watercourses associated with the development area.	Prevent the impact from transpiring.
3.	Energy consumption.	Use of energy during the operational phase of the proposed development.	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the energy usage associated with the operation of the proposed development area.	Prevent the impact from transpiring.
4.	Increased Noise	The movement of vehicles and heavy machinery as well as residents during operational phase and maintenance of the proposed development will alter the ambient noise levels in the area.	Negative	It must be ensured that the noise levels generated by the site operational and maintenance activities should be maintained and be in accordance with the municipal bylaws. Increased noise levels must be maintained below levels which will be audible by the surrounding receptors. In addition, to ensure that no complaints raised by Interested and Affected Parties (I&APs) relating specifically to the impacts of increased or unacceptable noise levels associated with the proposed project.	Prevent the impact from transpiring.
5.	Improvement on livelihood of the local communities	Improvement livelihood of the local communities in the form of employments and services as a result of the proposed development.	Positive	Ensure that locals benefit from the opportunities and services generated by the proposed development.	None required.
6.	Influx of people into the area looking for job opportunities (Social Impact)	People from other areas may be attracted into the area for job opportunities which may lead to possibility of theft and over-crowded area.	Negative	Ensure that all reasonable measures are taken to prevent impacts from theft associated with the operation of the proposed development area.	Reduce the extent of the impact.
7.	Increased traffic congestion	Increased traffic in the area during the rush hours from the residents and other locals to- and from- the shopping	Negative	Ensure that all reasonable measures are taken to prevent any impacts on the traffic associated with the operation of the proposed development area.	Reduce the extent of the impact.

Id.	Impact	Description	Nature of Impact (Negative / Positive)	Management Objective / Principle	Level of Mitigation
Operational Phase					
8.	Contribution to the Local Economic Development and Infrastructural Development.	centre. Operational phase of the development and the associated infrastructures such as road, will contribute to the Local Economic Development and infrastructural development in the area.	Positive	Ensure that all reasonable measures are taken to enhance the Local Economic and infrastructural development associated with the operation of the proposed development area.	None required.
9.	Improved water management and/or conservation	The operation of the proposed development will improve the water management and/or conservation through appropriate storm water capturing.	Positive	Enhancement of water resource management and/or conservation.	Prevent the impact from transpiring.

Table 10-3: Summary of Decommissioning Phase Impacts

NB: The impacts below have been determined for the decommissioning of the proposed construction site. All activities relating to the future decommissioning of the proposed development and the associated infrastructure does not form part of this application and as such would be subject to a separate Environmental Authorisation Process.

Id.	Impact	Description	Nature of Impact (Negative / Positive)	Management Objective / Principle	Level of Mitigation
Decommissioning Phase					
The development is permanent and will not be decommissioned. Only the construction site at the end of the construction period will need decommissioning and rehabilitation.					

11 APPROACH TO CORRECTIVE ACTION

11.1 Implementation of Corrective Action

Checking and corrective action forms part of the environmental management function and is aimed at ensuring that the necessary environmental management activities are being implemented and that the desired outcomes are achieved. When non-conformities do occur that have a negative impact on the environment, these should be rectified by the implementation of corrective actions issued by the ECO and PM within a reasonable or agreed period of time. All corrective actions need to be documented and the outcome photographed and included in the next report. Broadly, the mechanisms for addressing non-compliance that are provided for in the environmental specifications and associated contract documentation can be divided into the following categories:

- Controlling performance via the certification of payments;
- Requiring the Contractor to “make good”, at their own cost, any unjustifiable environmental degradation;
- Implementing a system of penalties to dissuade environmentally risky behaviours;
- Removing environmentally non-compliant staff/ plant from site, or suspending part or all of the activities on site;
- To confirm, upon receipt of the Tender, that the Contractor has made sufficient allowance in his Tender Price for meeting the various environmental requirements; and
- During the tender adjudication process for each Contract, each Contractor should be scored in terms of the aforementioned considerations and allocated an environmental competency score. This score should form a key consideration in the final decision-making regarding the award of the various contracts.

12 METHOD STATEMENTS

A Method Statement (MS) must be compiled for every activity undertaken by the Contractor which poses a risk to the environment (natural, biophysical and social), and includes the following:

- The MS should be submitted at least 7 working days prior to the commencement of work to the ECO;
- A MS describes the scope of the intended work in a step by step description to ensure that the ECO / EO understand the Contractors intentions. This will enable them to assist in devising any mitigation measures which would minimise environmental impact during these tasks;
- The ECO may require changes to a MS if it does not comply with the specification or if, in the reasonable opinion of the ECO, the proposal may result in, or carries a greater than reasonable risk of damage to the environment in excess of that permitted by the EMPr or any legislation;
- The Contractor shall carry out the activities in accordance with the approved MS;

-
- Approved MS shall be readily available on the site and shall be communicated to all relevant personnel;
 - Approval of the MS shall not absolve the Contractor from any of his obligations or responsibilities in terms of the contract;
 - No claim for delay or additional cost incurred by the Contractor shall be entertained due to inadequacy of a MS;
 - For each instance where it is requested that the Contractor submit a MS to the satisfaction of the ECO, the format should clearly indicate as a minimum the following:
 - Responsible person (Name and Identity Number) and an alternative (Name and Identity Number);
 - The applicable requirements provided in all legislation and policies which have a bearing on the proposed activities (refer to **Table 7-1**);
 - Training Requirements;
 - Timing of activities as per the Project / Construction Schedule;
 - Materials, plant and equipment to be used;
 - Proposed construction procedure, including the order in which the activities making up the procedure will be carried out, designed to implement the relevant environmental specifications;
 - The system to be implemented to ensure compliance with the above;
 - Person Protection Equipment (PPE) required;
 - A detailed description of the process of work, methods and materials;
 - Emergency Procedures;
 - Response in the case of a non-compliance; and
 - Other information deemed necessary by the ECO.
 - All MS must be signed by the Engineer; and
 - Work may not commence until the MS has been approved by the ECO. All MS will form part of the EMPr documentation and are subject to all terms and conditions contained within the EMPr main document.

The following MS shall be prepared by the Contractor for approval:

- **Site Layout:** The graphical representation with detailed notes of the location, layout and method of establishment of the construction camp must be provided and must include the following:
 - All Contractor's buildings, and/or offices;
 - Lay down areas;
 - Vehicle and plant storage areas, including wash areas;
 - Workshops, if required and approved by ECO;
 - Fuel storage and dispensing areas, if required and approved by ECO;
 - Cement/concrete batching areas, if required and approved by ECO (including the methods employed for the mixing of concrete and particularly the containment of runoff water from such areas and the method of transportation of concrete);
 - Other infrastructure required for the running of the project.
- **Access Routes:** Details, including a drawing, showing where and how the access points and routes will be located and managed must be provided in a MS. Details of fences and gates affected or used during the construction activities, including a drawing showing the location of fences and access gates must be provided.
- **Pollution control:** Expected solid waste types, quantities, methods and frequency of collection and disposal as well as location of disposal sites must be identified and

stated in a MS. The MS shall further include methods of minimising, controlling, collecting and disposing of contaminated water, and details of any hazardous substances/materials to be used, together with the transport, storage, handling and disposal procedures for the substances.

- **Safety considerations:** The Contractor shall provide details identifying what safety precautions will be implemented to ensure the safety of all staff, and the general public at large, on site during the life of the project. This will include protective clothing requirements for all types of construction activities on site, including protection against dust, noise, falling objects, and work associated with electricity and working at heights.
- **Emergency procedures:** The Contractor shall provide details regarding all relevant emergency procedures that will be implemented for fire control and accidental leaks and spillages of hazardous substances (including fuel and oil). The Contractor shall further include details of risk reduction measures to be implemented including firefighting equipment, fire prevention procedures and spill kits.
- **Waste management control:** The Contractor shall provide details regarding how solid and liquid waste generated on the construction site and site camp will be collected, stored, transported and disposed of. Details of any service provider(s) appointed to manage this task must also be provided.
- **Storm water and erosion control:** The Contractor shall provide details of how storm water emanating within or adjacent to the construction site may impact on construction activities. Details on how the Contractor will deal with storm water runoff and potential erosion within the construction footprint and servitude must be provided. Details of any service provider(s) appointed to manage this task must also be provided.

13 ENVIRONMENTAL AWARENESS PLAN

Environmental awareness training is required for all personnel involved in the proposed project. This includes all employees working on the site including temporary labourers, contractors and subcontractors. The Environmental Awareness Plan is intended to describe the method that will be adopted by the proponent to inform any person acting on their behalf, including an agent, sub-contractor, employee or any person rendering a service, of any environmental risk which may result from the implementation of the project activities and the manner in which risks must be managed in order to avoid adverse environmental consequences.

Environmental awareness training should cover:

- The importance of the EMPr;
- Specific details of the EMPr;
- Employees role in compliance with the EMPr;
- Environmental effects associated with the activities;
- Training targeted at specific personnel, e.g. example operators of heavy machinery;
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;

-
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures;
 - Emergency preparedness and response requirements;
 - The potential consequences of departure from specified operating procedures;
 - The mitigation measures required to be implemented when carrying out their work activities;
 - Environmental legal requirements and obligations;
 - The importance of not littering;
 - The importance of using supplied toilet facilities;
 - The need to use water and electricity sparingly; and
 - Details of and encouragement to minimise the production of waste and re-use, recover and recycle waste where possible.

Training should be conducted by a suitably qualified person and if necessary in more than one language to ensure it is understood by all workers. Copies of the environmental training must be available on site in languages appropriate to the work force. Records of the training sessions including attendance registers, nature of training and date of training should be kept to ensure all parties have received the necessary training and for auditing purposes.

In addition to training, general environmental awareness must be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout its duration. Environmental awareness and training is an important aspect of the implementation of the EMPr. Once the awareness plan and training material are available, the entire workforce and project management team should undergo an environmental awareness training course. Environmental awareness training is critical for the workforce to understand how they can play a role in achieving the objectives specified in the EMPr. All visitors to the site (including project team members which are not based onsite), must undergo Environmental Induction before being permitted to the construction and associated area. The Environmental Induction should be structured so as to provide a condensed version of the comprehensive Environmental Awareness Training that will be provided to the workforce / onsite staff.

Environmental awareness could be fostered in the following manner:

- Induction for all workers on site, before commencing work;
- Refresher courses as and when required;
- Daily toolbox talks at the start of each day with all workers coming on site, where workers might be alerted to particular environmental concerns associated with their tasks for that day or the area/habitat in which they are working; and
- Courses must be given by suitably qualified personnel and in a language and medium understood by workers/employees.

The Environmental Awareness Plan should be drawn up by the PM, in consultation with the ECO and EO and should be kept for implementation and audit purposes. The

Environmental Awareness Plan should be a dynamic document (or set of documents) which should be updated as changes to the project, environment, staff and *etc.* occur.

14 TRAINING

The applicable training will be as follows:

- The EO shall be appropriately trained in environmental management and shall possess the skills necessary to impart environmental management skills to all personnel involved in the construction of the proposed mixed business and residential development;
- The PM and EO shall ensure, on behalf of the Developer, that the employees (including construction workers, engineers, and long-term employees) are adequately trained and understand the management measures provided in the EMPr; and
- All employees shall have an induction presentation on environmental awareness. The cost, venue and logistics shall be for Antonio Cremona's account.

Where possible, training must be conducted in the predominant mother language spoken by the employees. The induction and training shall, as a minimum, include the following:

- The importance of conformance with all the specifications of the EMPr and other environmental policies and procedures;
- The significant environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the EMPr and other environmental policies and procedures;
- The potential consequences of departure from specified operating procedures; and
- The mitigation measures required to be implemented when carrying out their work activities.

14.1 Environmental Authorisation

The ECO shall convey the contents of this EMPr and the conditions of the EA and discuss the contents in detail with the Developer's PM and Contractors. This formal induction training shall be done with all main and sub-contractors. Record of the training dates, people who attended and discussion points shall be kept by the ECO.

15 ENVIRONMENTAL MANAGEMENT MEASURES

The management measures documented in each of the sub-sections below have been compiled using the following information:

- Impact Assessment and mitigation measures documented in the BAR for the proposed establishment of a mixed business and residential development and its operations; and
- Mitigation and management recommendations provided by the specialist studies and EAP.

The mitigation and management measures relating to each anticipated impact are described in **Table 15-1** and **Table 15-2**.

In addition to the above-mentioned information sources, the EMPr should be updated to include the conditions documented in the EA to be received upon approval of the BAR. The Developer should appoint an EAP to amend the EMPr should amendments be required by GDARD.

15.1.1 Planning Phase

To mitigate the negative environmental impacts, a number of measures will have to be addressed in the design of the project's layout during the planning phase. An inspection must be carried out on the design layout before commencement of the proposed mixed use development in order to ensure that the mitigation measures have been incorporated in the design.

15.1.2 Construction Phase

Table 15-1: Impacts, Management/ Mitigation Measures during Pre-Construction and Construction Phase

Id.	Impact	Mitigation / Management Measures	Responsible Person	Frequency and/or Time Period	Method of Monitoring
Pre-Construction and Construction Phase					
1.	Economic benefit to local economy	Ensure that unskilled labour required for the construction and installation of equipment are predominately South Africans from the surrounding communities.	Developer / Contractor	Not Applicable	Not Applicable.
2.	Dust nuisance	Water sprays, especially on dry and windy days, on haul roads and where vegetation is being / has been cleared. Dust nuisance Complaints should be recorded in the complaints register at the construction site.	Contractor / EO / Developer / ECO	Duration of Construction Phase.	Complaints register must be kept at the construction site. No. of dust complaints received will be used to measure the effectiveness of the dust impact mitigation.
3.	Possible sedimentation from uncovered areas	Vegetation clearance should be undertaken in phases, i.e. limited to working unit at a time.	Contractor / EO / ECO	Monthly monitoring within the duration of Construction Phase.	Monthly ECO Audits.
4.	Loss of ecological integrity and natural habitats	No mitigation measures proposed. However, the proposed development site has largely degraded over the years.	Not Applicable.	Not Applicable.	Not Applicable.
5.	Vehicle traffic congestion	Ensure that proper road signage is used. Limit access to the construction site to construction vehicles only.	Contractor / Developer	Monthly monitoring within the duration of Construction Phase.	Monthly ECO Audits.

Id.	Impact	Mitigation / Management Measures	Responsible Person	Frequency and/or Time Period	Method of Monitoring
Pre-Construction and Construction Phase					
6.	Land/soil pollution from chemical / hydrocarbon spills, litter and waste metals.	<p>Establish a chemical storage area that is suitably designed to contain all spills.</p> <p>Ensure that hydrocarbons are stored in a bunded area with a capacity of 110% of storage volume.</p> <p>Ensure that the bunded area is suitably designed to allow for cleaning and prevent spillage to the environment.</p> <p>Ensure that all vehicles, storage, and usage areas have suitable spill kits.</p> <p>Develop a chemical and hydrocarbon spill procedure.</p> <p>Ensure that chemical and hydrocarbon usage is controlled.</p> <p>No servicing of vehicles onsite.</p> <p>Regular inspection and servicing of vehicles.</p> <p>Develop a spill management procedure for vehicles that may leak accidentally.</p> <p>Develop a waste management plan.</p> <p>Ensure that concrete spills are cleaned up.</p> <p>Ensure litter is cleared regularly to designated waste areas.</p>	Contractor / EO / ECO	Monthly monitoring within the duration of Construction Phase.	Monthly ECO Audits.
7.	Pollution may enter ground / surface water	<p>Establish a chemical storage area that is suitably designed to contain all spills.</p> <p>Ensure that hydrocarbons are stored in a bunded area with a capacity of 110% of storage volume.</p> <p>Ensure that the bunded area is suitably designed to allow for cleaning and prevent spillage to the environment.</p> <p>Ensure that all vehicles, storage, and usage areas have suitable spill</p>	Contractor / EO / ECO	Monthly monitoring within the duration of Construction Phase.	Monthly ECO Audits.

Id.	Impact	Mitigation / Management Measures	Responsible Person	Frequency and/or Time Period	Method of Monitoring
Pre-Construction and Construction Phase					
		kits. Develop a chemical and hydrocarbon spill procedure. Ensure that chemical and hydrocarbon usage is controlled.			
8.	Fugitive dust emissions (Health impact)	Dust suppression mitigation is recommended.	Contractor / EO / ECO	Duration of Construction Phase.	Complaints register must be kept at the construction site. No. of dust complaints received will be used to measure the effectiveness of the dust impact mitigation.
9.	Erosion and loss of soil resources	Develop a storm water management plan prior to commencement with construction. Use silt traps where necessary. Use bumps, humps, and cut off drains to control water velocity of exposed soils. Stockpile soils from footings in demarcated areas. Use soil material from footings in rehabilitation of impacted areas wherever possible. Develop a spill management procedure for vehicles that may leak accidentally. Develop a waste management plan.	Contractor / EO / ECO	Monthly monitoring within the duration of Construction Phase.	Monthly ECO Audits.
10.	Increased noise	Limit construction activities to daylight working hours.	Contractor / EO / Developer	Duration of Construction Phase.	Complaints register must be kept at the construction site. No. of noise complaints received will be used to measure the effectiveness of the noise impact mitigation.
11.	Sedimentation,	Soil stock piling to be done at the	Contractor / EO / ECO	Monthly monitoring within the duration of Construction	Monthly ECO Audits.

Id.	Impact	Mitigation / Management Measures	Responsible Person	Frequency and/or Time Period	Method of Monitoring
Pre-Construction and Construction Phase					
	siltation, and increased turbidity in surface water	designated area.		Phase.	
12.	Impact on heritage resources	In the unlikely event of any unmarked human burials, burial pits, potsherds or stone tools being uncovered during earthworks for the proposed development, these must be reported immediately to the South African Heritage Resources Agency (Mr Andrew Salomon (021 362 2535))	Contractor / EO / ECO	Duration of Construction Phase.	Monthly ECO Audits.
13.	Uncontrolled activities may lead to fires	Undertake monitoring to determine if fires have any impact on the surrounding environment, suitable rehabilitation is to be undertaken where necessary. A fire management plan to be established prior to construction commencing. Vegetation is to be cut back in areas where welding is undertaken to prevent fires from occurring. Fire breaks along the servitude are to be established. Suitable fire fighting equipment and training is to be provided.	Contractor / EO / Developer / ECO	Monthly monitoring within the duration of Construction Phase.	Monthly ECO Audits.

15.1.3 Operational Phase

Table 15-2: Impacts, Management/ Mitigation Measures during Operational Phase

Id.	Impact	Mitigation / Management Measures	Responsible Person	Frequency and/or Time Period	Method of Monitoring
Operational Phase					
1.	Pollution from	Ensure that a site clean-up is undertaken at the end of every	Developer / Contractor	Duration of Operational Phase.	Compliance inspection by the

Id.	Impact	Mitigation / Management Measures	Responsible Person	Frequency and/or Time Period	Method of Monitoring
Operational Phase					
	litter, waste metals, vehicle spills / hydrocarbon spills during maintenance activities	maintenance cycle to ensure that no pollution has occurred. Where this has happened appropriate remedial action is to be taken.			authority.
2.	Pollution may enter ground / surface water	Ensure that all vehicles, storage, and usage areas have suitable spill kits. Develop a chemical and hydrocarbon spill procedure. Ensure that chemical and hydrocarbon usage is controlled.	Contractor / Developer	Duration of Operational Phase.	Compliance inspection by the authority.
3.	Energy consumption	Energy-saving awareness activities / notices to be practiced within the development site (both business and residential) areas.	Developer	Duration of Operational Phase.	Not applicable.
4.	Increased Noise	Noise from the proposed residential occupants should be regulated through the building manager and rules of the residential area.	Developer.	Duration of Operational Phase.	Complaints register must be kept at the construction site. No. of noise complaints received will be used to measure the effectiveness of the noise impact mitigation.
5.	Improvement on livelihood of the local communities (positive)	No Mitigation proposed	Developer	Duration of Operational Phase.	Not Applicable.
6.	Influx of people into the area	Employment opportunities must be allocated to residents in the local	Developer	Duration of Operational Phase.	Not Applicable

Id.	Impact	Mitigation / Management Measures	Responsible Person	Frequency and/or Time Period	Method of Monitoring
Operational Phase					
	looking for job opportunities (Social Impact)	communities surrounding the development first.			
7.	Increased traffic congestion	Establishment of the proposed public road or street is a mitigation measure to cater for more expected vehicle in the area. Proper road signs to be placed along the proposed streets.	Developer	Duration of Operational Phase.	Not Applicable
8.	Contribution to the Local Economic Development and Infrastructural Development (Positive)	None required	Developer	Duration of Operational Phase.	
9.	Improved water management and/or conservation (Positive)	Development designs to incorporate the erosion controls and storm water management infrastructures.	Developer	Duration of Operational Phase.	Compliance inspection by the authority.

15.1.4 Decommissioning Phase

Table 15-3: Impacts, Management/ Mitigation Measures during Decommissioning Phase

Id.	Impact	Mitigation / Management Measures	Responsible Person	Frequency and/or Time Period	Method of Monitoring
Decommissioning Phase					
The development is permanent and will not be decommissioned. Only the construction site at the end of the construction period will need decommissioning and rehabilitation.					

16 MONITORING

This chapter deals with Compliance Monitoring as well as specific monitoring requirements, as per the Specialist Studies, during construction and operational phases. The key to a successful EMPr is appropriate monitoring and review to ensure effective functioning of the EMPr and to identify and implement corrective measures in a timely manner. An audit of the environmental monitoring and management actions undertaken is essential to ensure that it is effective in operation, is meeting specified goals, and performs in accordance with relevant regulations and standards.

Regular monitoring of all the environmental management measures and components shall be carried out by the Developer's PM and independent ECO to ensure that the provisions of this plan are adhered to. Ongoing and regular reporting of the progress of implementation of this Programme should be done. Various points of compliance will be identified with regard to the various impacts that the construction will have on the environment.

Prior to the start of construction activities, an audit schedule should be drawn up, on basis of the environmental authorisation requirements and with input from ECO. The audit schedule should include target dates for implementation of recommendations and timeframes for submission to the Developer's EM, Developer's appointed PM and GDARD. The audits should be timed to coincide with scheduled project meetings, where possible.

16.1 Auditing

The key to a successful EMPr is appropriate monitoring and review to ensure effective functioning of the EMPr and to identify and implement corrective measures in a timely manner. An audit of the environmental monitoring and management actions undertaken is essential to ensure that it is effective in operation, is meeting specified goals, and performs in accordance with relevant regulations and standards.

Regular monitoring of all the environmental management measures and components shall be carried out by the Developer (Antonio Cremona) and the ECO to ensure that the provisions of this plan are adhered to. Ongoing and regular reporting of the progress of implementation of this Programme should be done. Various points of compliance will be identified with regard to the various impacts that the construction will have on the environment.

Inspections and monitoring shall be carried out to assess the implementation of the EMPr. Visual inspections on all environmental aspects shall be carried out on a regular basis.

Prior to the start of construction activities, an audit schedule should be drawn up, on the basis of the EA requirements and with input from ECO. The audit schedule should include target dates for implementation of recommendations and timeframes for submission to the Developer's appointed PM and the GDARD. The audits should be timed to coincide with scheduled project meetings, where possible.

16.2 Site Documentation or Reporting

Site documentation standard shall be used to keep records on site. In addition, all non-compliances to the EA will be reported to the assigned PM within 24 hours. All documents as listed below shall be kept on site and be available for monitoring and auditing purposes. Site inspections by an Environmental Audit team may require access to this documentation for auditing purposes. The documentation shall be signed by all parties to ensure that such documents are legitimate. Regular monitoring of all site works by the ECO is imperative to ensure that all problems encountered are solved punctually and amicably. When the ECO is not available, the PM shall keep abreast of all works to ensure no problems arise.

The following documents must be kept on site:

- Access negotiations and physical access plans;
- Site instructions;
- Pre-construction audit report undertaken by ECO;
- Complaints register;
- Records of all remediation / rehabilitation activities;
- Copy of this EMPr;
- Copy of the Environmental Authorisation;
- Environmental Awareness Plan;
- Monthly compliance report;
- Environmental training records; and
- Emergency response procedures.

The monthly compliance report should include:

- Complaints received from I&APs and details of the actions taken;
- Environmental incidents, spills of hazardous substances, *etc.*
- Environmental damage which requires rehabilitation; and
- Damages of private property such as buildings or crops.

16.3 Monitoring

16.3.1 Undertaking audits

The Developer or PM shall appoint a qualified and experienced ECO to ensure implementation of and adherence to the EMPr.

The ECO shall conduct audits to ensure that the system for implementation of the EMPr is operating effectively. The audit shall check that a procedure is in place to ensure that:

- The EMPr and the Method Statements being used are the up to date versions;
- Variations to the EMPr, Method Statements and non-compliances and corrective actions are documented; and
- Emergency procedures are in place and effectively communicated to personnel.

The audit programme shall consist of the following at a minimum:

- First audit no later than 1 month after EA is obtained; and
- Thereafter audits at monthly intervals, at a minimum or as per EA requirement.

16.3.2 Compliance with the EMPr

The Developer (Antonio Cremona) and/or its agents are deemed not to have complied with the EMPr and remedial action if:

- There is evidence of contravention of the EMPr clauses within the boundaries of the site or extensions;
- Environmental damage ensues due to negligence; and
- The Developer (Antonio Cremona) fails to comply with corrective or other instructions issued by the PM, within a time period specified by the PM.

16.4 Environmental Contact Person

To be confirmed prior commencement of the proposed development should GDARD grant an EA to proceed with the project.

16.5 Emergency Numbers

- Police: 10111
- Ambulance 10177
- Netcare 911 082 911

17 SITE REHABILITATION

17.1 Removal of structures and infrastructure

During and following the completion of the construction activities, the area must be rehabilitated by appropriate landscaping, levelling, topsoil dressing, land preparation, alien plant eradication

and vegetation establishment. All construction plant, equipment, storage containers and temporary fencing must be removed from site.

17.2 Waste and pollution control

- Waste minimisation, the re-use, recycling and recovery of waste must be promoted;
- Rubble, including surplus rock, foundations and batching plant aggregates will be removed from the construction site and firstly recycled and re-used, where possible, before disposed of at a registered landfill site;
- All waste storage containers will be removed from site on a regular basis;
- All portable sanitation facilities will be removed by a certified contractor. It must be ensured that no leaks or spillage from sanitation facilities occurs during the removal thereof; and
- All hazardous waste which is temporary stored on site, including the storage containers must be removed from site and disposed of at a registered hazardous landfill site.

17.3 Grassing

- Grassing must be undertaken by a suitably qualified Contractor;
- Grass areas using the method specified on the plant plans;
- Only indigenous seeds (seed mixes) common to the area must be used in rehabilitation and re-seeding of the disturbed areas;
- Sodding may be done at any time of the year, but seeding must be done during the summer when the germination rate is higher; and
- Hydro-seeding with a winter mix will only be specified where re-grassing is urgent, and cannot be postponed until summer.

17.4 Ripping and Scarifying

- Rip and / or scarify all areas following the application of topsoil to facilitate re-growth of vegetation where required. The ECO will specify whether ripping and / or scarifying is necessary, based on the site conditions immediately before these works begin;
- Rip and / or scarify all disturbed (and other specified) areas of the construction site, including temporary access routes and roads, compacted during the execution of the works; and
- Areas may not be ripped / scarified under wet conditions, as the soil will not break up.

17.5 Topsoil replacement and soil amelioration

- The principle of Progressive Reinstatement must be followed wherever possible. This includes the reinstatement of disturbed areas on an ongoing basis, immediately after the specified construction activities for that area are concluded;
- Execute top soiling activity prior to the rainy season or any expected wet weather conditions;
- Execute topsoil placement concurrently with construction where possible, or as soon as construction in an area has ceased;

- Replace and redistribute stockpiled topsoil together with herbaceous vegetation, overlying grass and other fine organic matter in all disturbed areas of the construction site, including temporary access routes and roads. Replace topsoil to the original depth. These areas will be quantified by the ECO;
- Place topsoil in the same area from where it was stripped. If there is insufficient topsoil available from a particular soil zone to produce the minimum specified depth, topsoil of similar quality may be brought from other areas of similar quality;
- The suitability of substitute material will be determined by means of a soil analysis addressing soil fraction, fertility, pH and drainage, and approved by the ECO; and
- Do not use topsoil suspected to be contaminated with the seed of alien vegetation.

17.6 Maintenance of rehabilitated areas

- Allow for a maintenance period of one year following practical completion;
- Landscape maintenance must be undertaken by a suitably qualified professional or landscape architect;
- Cordon off areas that are under rehabilitation as no-go areas using danger tape and steel droppers. If necessary, these areas should be fenced off to prevent vehicular, pedestrian and livestock access.
- Re-vegetation must match the vegetation type which previously existed, unless otherwise indicated in the Contract or specified by the ECO.
- Water all transplanted, planted and grassed areas;
- For planted areas that have failed to establish, replace plants with the same species as originally specified. The same species as originally specified must be used unless otherwise specified by the ECO; and
- A minimum grass cover of 80% is required, and individual plants must be strong and healthy growers at the end of the Maintenance Period.

18 FINANCIAL PROVISIONING

Section 30 of Chapter five of NEMA proposes penalties for non-compliance with the provisions of Chapter five. Any person who contravenes the regulations set out here or commits an offence as described in this section is liable for a fine or jail term. The responsible person, who is undertaking an activity, that contravenes these regulations, will be liable for these penalties. Fines and penalties shall be managed in accordance with the Public Management Finance Act.

A penalties and fines system shall be developed for this project and shall take the following in consideration:

- Penalties will be issued for the transgressions and non-compliances where the Contractor inflicts non-repairable damage upon the environment or fails to comply with any of the environmental specifications. The Contractor shall be liable to pay a penalty over and above any other contractual consequence.
- Penalties may be issued per incident at the discretion of the PM and ECO. The exact value of the penalty imposed shall be at the discretion of the PM and ECO. The Contractor will also be responsible for remediation costs.

- Such fines will be issued in addition to any remedial costs incurred as a result of non-compliance with the EMPr. The PM will inform the Contractor of the contravention and the amount of the penalty, and will deduct the amount from monies due under the Contract.
- The PM and ECO shall be the judge as to what constitutes a transgression in terms of this clause subject to the provisions of the General Conditions of Contract.
- For each subsequent similar offence, the penalty may, at the discretion of the PM and ECO be doubled in value to a maximum value to be determined.
- Payment of any penalty in terms of the contract shall not absolve the offender from being liable from prosecution in terms of any law.

A guideline of minimum fine values is provided for minor, moderate and serious offences in **Table 18-1** below.

Table 18-1: Guideline to fines for minor, moderate and serious offences

	Offences	Fine
Minor offences	<ul style="list-style-type: none"> • Littering • Possession of intoxication substances on site. • Failure to use ablutions. • Moving on areas recently landscaped. • Disturbing grassed areas. • Not parking in demarcated areas. • Not using safety equipment • Wasting of water and electricity. • Not removing domestic waste off site. • Not stockpiling topsoil adequately. 	R 1500 - 00
Moderate offences	<ul style="list-style-type: none"> • Oil spills • Persistent oil leaks on vehicles. • Generation of excessive dust and noise. • Transgression of the speed limit. • Illegal fires. • Burying of waste. • Use of intoxicate substances on site. • Lack of erosion control. • Entering non-demarcated areas. • Hunting and snaring. • Damaging of pre- identified trees. 	R 5000-00
Serious offences	<ul style="list-style-type: none"> • Large oil/ hazardous waste spill. • Removal of pre-identified trees. • Damage of pre- identified heritage sites or objects. • Continually exceed noise limits. • Transgression of legal requirements. • Sanitation facilities not adequate. • Pollution of groundwater. • Removal of any protected plant or other species. • Damage or pollution of wetlands. 	R15 000.00

19 CONCLUSION

It is the opinion of the EAP that the implementation of the management and mitigation measures provided in the EMPr is sufficient to manage the environmental impacts associated with the

proposed project. This EMPr will furthermore contribute to realising the following over-arching objectives set out to be reached by the use of the document as an environmental management tool:

- Ensure that sufficient monetary provision, aligned with the significance of the environmental impact and scale of the project, is made to remediate and rehabilitate the environment impacted on by the construction activities;
- Verify environmental performance through information on impacts as they occur;
- Respond to unforeseen events and environmental incidents; and
- Provide feedback to drive continual improvement in environmental performance.

The effectiveness of this EMPr will to a large degree rest on adherence to and fulfilling the roles and responsibilities of each role player and stakeholder. The roles and responsibilities for management actions contained in the EMPr (refer to Section 9 of this document) and arrangements for coordination among the role players are clearly defined in this document.

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