TOTAL SOUTH AFRICA (PTY) LTD

PROPOSED REMOVAL OF FUEL TANKS FROM THE CONSERVATION AREA, HLUHLUWE GAME RESERVE, KWAZULU-NATAL

DRAFT BASIC ASSESSMENT REPORT

By

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Executive Summary

Mills & Otten Environmental Consultants (Pty) Ltd act as the independent environmental assessment practitioner (EAP) appointed to facilitate the application for Environmental Authorisation for the proposed removal of fuel tanks from the conservation area located at the Hluhluwe Game Reserve in KwaZulu-Natal Province. The proposed project involves the removal of all infrastructure that was used for the operation of the facility. This includes 3 x 14m^3 underground storage tanks (USTs) that stored diesel and petrol, pipelines and pump islands.

The National Environmental Management Act (Act 107 of 1998) (NEMA) prescribes the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority based on the findings of an Environmental Impact Assessment (EIA). In the KwaZulu-Natal Province these powers are delegated to the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA). According to the NEMA Environmental Impact Assessment Regulations 2014, as amended (Government Notice 326) environmental authorisation is required for activities listed in GN 983 (as amended) by following the Basic Assessment Process.

The proposed activity is listed under GN983 of 2014 (as amended) Listing Notice 1, Activity 31: *"The decommissioning of existing facilities, structure or infrastructure for –*

(i) Any development and related operation activity or activities listed in this notice, listing notice 2 or listing notice 3 of 2014.

(ii) Any expansion and related operation activity or activities listed in this notice, or listing notice 2 or listing notice 3 of 2014.

(iii) Any phased activity or activities for development and related operation activity or expansion and related operation activities listed in this notice or listing notice 3 of 2014; or

(iv) Any activity regardless the time the activity was commenced with, where such activity:

a. Is similarly listed to an activity in (i) or (ii) above; and

b. Is still in operation or development is still in progress;

Excluding where –

(aa) activity 22 of this notice applies, or

(bb) the decommissioning is covered by part 8 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) in which case the National Environmental Management Waste Act applies."

This report was compiled in accordance with the required contents of a Basic Assessment Report as prescribed in Appendix 1 of GN982 and as summarized in Table 1 of this report.

This is the Draft Basic Assessment Report (BAR) and is submitted to potential Interested and Affected Parties (I&APs) for review and comment. Notification of the proposed project and EIA process was undertaken by means of site notices, newspaper advertisement and emailed notification letters. I&APs are requested to review this report and submit any comments, questions or concerns to the EAP within a 30 day period. All comments received on this report will be incorporated into the Final BAR in order to ensure that all I&AP concerns are addressed before submitting the Final BAR to the competent authority for consideration and decision-making.

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Table 1 cross references the required contents of the Basic Assessment Report (BAR) as stipulated in GN 982 (as amended by GN 326), Appendix 1 with the contents of this report.

Table 1: NEMA Requirements and the contents of this report

No	Requirement	Section in this report
3. (1)	A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application and must include -	
(a)	Details of – (i) The EAP who prepared the report and (ii) Expertise of the EAP, including a curriculum vitae	See Section 1 and Appendix D
(b)	The location of the activity, including: (i) the 21 digit Surveyor General Code of each cadastral land parcel; (ii) Where available, the physical address and farm name (iii) Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties.	See Section 2
(c)	A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; Or if it is – (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken.	Refer to Appendix C – Facility Illustration
(d)	A description of the scope of the proposed activity, including – (i) All listed and specified activities triggered and being applied for; and (ii) A description of the activities to be undertaken including associated structures and infrastructure.	See Section 2 and 3
(e)	A Description of the policy and legislative context within which the development is proposed, including – (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) How the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools, frameworks and instruments.	See Section 3
(f)	A motivation for the need and desirability of the proposed development including the need and desirability of the activity in the	See Section

	context of the preferred location.		4
(g)	A motivation for the preferred site, activity and technology alternative		See Section 5
(h)	A full description of the process followed to reach the proposed preferred alternative within the site including -		
	(i)	details of the alternatives considered;	See Section 5
	(ii)	details of the public participation process undertaken in terms of regulation 41 of the Regulations including copies of the supporting documents and inputs;	See Section 6 and Appendix F
	(iii)	A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Not applicable – this is the draft BAR
	(iv)	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	See Section 7
	(v)	The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts – a) Can be reversed; b) May cause irreparable loss of resources; and c) Can be avoided, managed or mitigated;	See Section 8.2
	(vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	See Section 8.1
	(vii)	Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	See Section 8.2
	(viii)	The possible mitigation measures that could be applied and level of residual risk;	Refer to the EMPr – Appendix E
	(ix)	The outcome of the site selection matrix;	See Section 5: N/A
	(x)	If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and;	See Section 5
	(xi)	A concluding statement indicating the preferred alternatives, including preferred location of the activity;	See Section 9

(i)	A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including – (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an identification of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.	See Section 8
(j)	An assessment of each identified potentially significant impact and risk including – (i) cumulative impacts; (ii) The nature, significance and consequences of the impact and risk; (iii) The extent and duration of the impact and risk; (iv) The probability of the impact and risk occurring; (v) The degree to which the impact and risk can be reversed; (vi) The degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) The degree to which the impact and risk can be avoided, managed or mitigated;	See Section 8
(k)	Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these regulations and an indication as to how these findings and recommendations have been included in the final report;	See Section 8
(l)	An environmental impact statement which contains – (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers, and (iii) a summary of the positive and negative impacts of the proposed activity and identified alternatives;	See Section 9
(m)	Based on the assessment and where applicable impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;	Refer to the EMPr – Appendix E
(n)	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of the authorization;	See Section 11
(o)	A description of any assumptions, uncertainties and gaps in	See Section

	knowledge which relate to the assessment and mitigation measures proposed;	10
(p)	A reasoned opinion as to whether the proposed activity should or should not be authorized, and if the opinion is that it should be authorized, any conditions that should be made in respect of that authorization;	See Section 11
(q)	Where the proposed activity does not include operational aspects, the period for which the environmental authorization is required, the date on which the activity will be concluded, and the post-construction monitoring requirements finalized;	See Section 11.1
(r)	An undertaking under oath or affirmation by the EAP in relation to - (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	See Section 13
(s)	Where applicable, details of any financial provisions for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts;	Not Applicable
(t)	Any specific information that may be required by the competent authority; and	Not Applicable
(u)	any other matters required in terms of section 24(4)(a) and (b) of the Act	Not Applicable

1 Details and Experience of the EAP

Mills & Otten is a specialist, independent environmental consulting firm. It offers a full range of environmental services, including environmental impact assessments, waste management, pollution monitoring and environmental auditing.

The firm was established in 1992 by engineering geologist, Charles Mills and Kirstin Otten, an environmental scientist, who combined their expertise to create a company focused on helping clients with environmental challenges. Both partners have substantial experience in environmental consulting and the firm has to date been involved in over 4000 projects of varying scale and complexity throughout Southern Africa.

The details of the EAP are provided below:

Table 2: Details of the EAP

Company name	Mills & Otten Environmental Consultants (Pty) Ltd		
EAP name	Kirstin Otten		
Postal address	P.O. Box 84344, Greenside, 2034		
Physical address	115 Greenway, Greenside		
E-mail	kirstin@millsandotten.co.za	**Cell**	083 267 3003
Telephone	011 486 0062	**Fax**	086 554 6573
Qualifications & experience	BSc (Chemistry, Biochemistry, Genetics), over 30 years' experience in the environmental field.		
Professional affiliation(s)	Pri.Sci.Nat., MIWM, IAIA-SA		

2 Activity Description

Total South Africa (Pty) Ltd, the applicant, wishes to remove fuel storage tanks located at the workshops outside Hilltop camp in the Hluhluwe Game Reserve in KwaZulu-Natal. The tanks stored petrol and diesel and are connected via pipelines to pump islands that were used for the refuelling of Parks Board vehicles and equipment. The facility is more that twenty-five years old and stopped operating one year ago as it was non-compliant with the relevant SANS codes. Although the facility is no longer used; the infrastructure remains on site and must be formally decommissioned. This includes the removal of three 14m^3 underground storage tanks (USTs), as well the associated infrastructure such as the pipelines and pumps.

The facility does not have an Environmental Authorisation as it has been in operation for over twenty-five years and therefore predates the Environmental Impact Assessment regulations which were first promulgated in September 1997 under the Environmental Conservation Act (Act 73 of 1989). However, the storage of dangerous goods in a sensitive area is recognised under Listing Notice 3 of the 2014 EIA Regulations, as amended. The proposed closure of the

facility therefore triggers Activity 31 of Listing Notice 1 of the regulations. The activity is listed in the regulations as follows:

Listing Notice 1, Activity 31: *"The decommissioning of existing facilities, structure or infrastructure for –*

(v) Any development and related operation activity or activities listed in this notice, listing notice 2 or listing notice 3 of 2014.

(vi) Any expansion and related operation activity or activities listed in this notice, or listing notice 2 or listing notice 3 of 2014.

(vii) Any phased activity or activities for development and related operation activity or expansion and related operation activities listed in this notice or listing notice 3 of 2014; or

(viii) Any activity regardless the time the activity was commenced with, where such activity:

a. Is similarly listed to an activity in (i) or (ii) above; and

b. Is still in operation or development is still in progress;

Excluding where –

(aa) activity 22 of this notice applies, or

(bb) the decommissioning is covered by part 8 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) in which case the National Environmental Management Waste Act applies."

Prior to undertaking activities listed in GNR 983 of 2014, environmental authorisation has to be obtained from the relevant provincial environmental authority (in this case the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs, EDTEA). The application process to be followed is the Basic Assessment Process.

The EIA (Basic Assessment) Process is illustrated below:

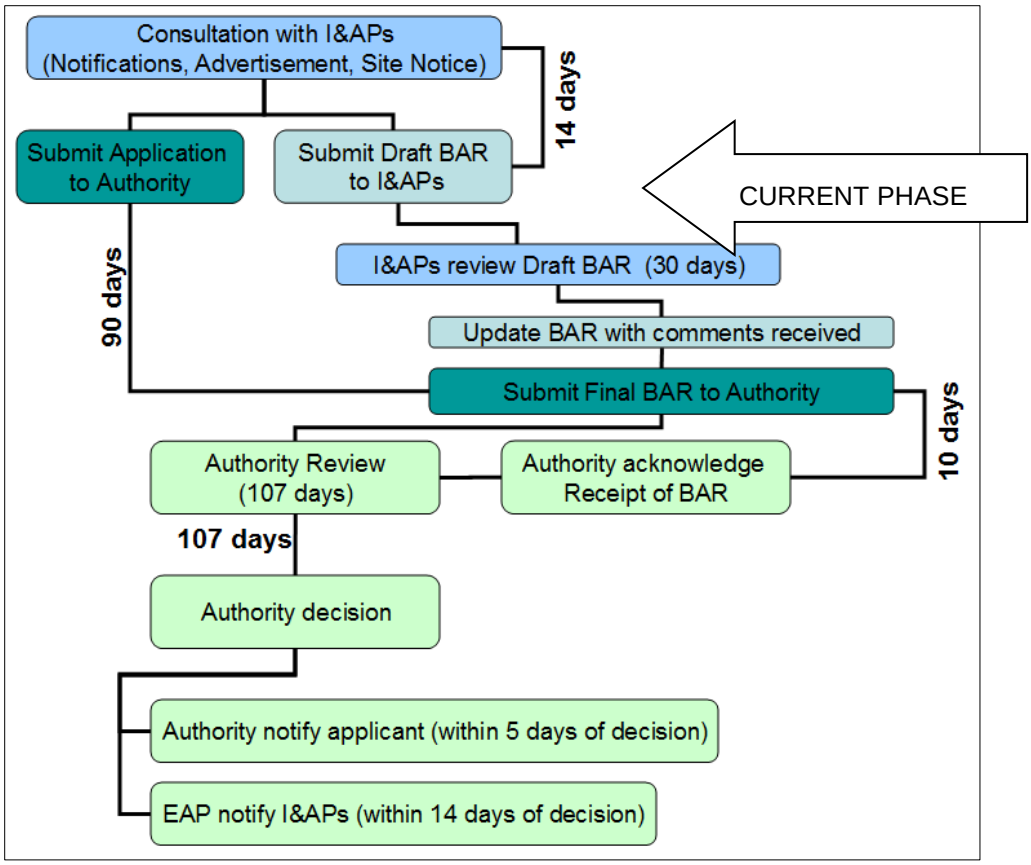

Figure 1: EIA (Basic Assessment) Process

The following table provides information specific to the project location.

Table 3: Project Location

Surveyor-General 21 digit code for the site that forms part of the application.																			
N	O	G	U	0	0	0	0	0	0	0	1	7	4	3	9	0	0	0	0	0

Property description:	The Farm Umfolozi-Hluhluwe Game Reserve No. 17439	
Current land-use zoning:	Government / Conservation	
Property size of all proposed sites (km^2):	917 375.67 km^2 (total property size)	
Development footprint size (m^2):	~120 m^2	
Site co-ordinates (Approximate centre of the site):	**Latitude (S):**	**Longitude (E):**
	28° 04’ 42.22”	32° 02’ 39.39”

3 Policy and Legislative Context

The following legislation is applicable to this application:

- National Environmental Management Act No. 107 of 1998
- Environmental Impact Assessment Regulations 2014, as amended (GNR 326 and 327 of 2017),

The following Listed Activity, as contemplated in the 2014 EIA Regulations as amended and Listing Notices is relevant to this application:

Table 4: Listed activities relevant to this application

Government Notice R983 of 04 December 2014, as amended by Government Notice R327 of 07 April 2017 Activity No. 31	The decommissioning of existing facilities, structure or infrastructure for – Any development and related operation activity or activities listed in this notice, listing notice 2 or listing notice 3 of 2014. (i) Any expansion and related operation activity or activities listed in this notice, or listing notice 2 or listing notice 3 of 2014. (ii) Any phased activity or activities for development and related operation activity or expansion and related operation activities listed in this notice or listing notice 3 of 2014; or (iii) Any activity regardless the time the activity was commenced with, where such activity: a. Is similarly listed to an activity in (i) or (ii) above; and b. Is still in operation or development is still in progress; Excluding where – (aa) activity 22 of this notice applies, or (bb) the decommissioning is covered by part 8 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) in which case the National Environmental Management Waste Act applies."
Relevance to the proposal	The applicant proposes decommission the existing fuel tanks which are located in a sensitive area.

The following legislation, policies, plans, guidelines, spatial tools and planning frameworks also apply to this project and have been considered in the preparation of this report:

3.1 The Constitution of the Republic of South Africa (Act 108 of 1996)

Section 24 of the Bill of Rights states that everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures.

Implications for the proposed decommissioning include the obligation to ensure that the proposed removal of the infrastructure will not result in pollution and/or ecological degradation.

3.2 National Water Act (Act 36 of 1998) (NWA)

The purpose of the National Water Act (NWA) 36 of 1998 is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in an environmentally sustainable way. Section 21 of the NWA provides various scenarios for which a water use license is required.

Licensing under the NWA is not required for this project as no Section 21 water uses are proposed. Management measures are included in the EMPr to ensure protection of water resources.

3.3 National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA)

The National Environmental Management: Waste Act (Act 59 of 2008) allows for the regulation of waste management South Africa in order to protect health and the environment by providing reasonable measures for the prevention of pollution. Waste related activities that are likely to have a detrimental impact on the environment are therefore have a waste management licence.

Licensing under the NEMWA is not required for this project. Waste associated with the project will nevertheless be managed in accordance with sound waste management principles, as stipulated in the EMPr.

3.4 National Heritage Resources Act (Act 25 of 1999) (NHRA)

The NHRA does not apply to the proposed development as the proposal does not involve any of the development categories stipulated in Section 38 of the NHRA, and no heritage resources will be affected by the project as it involves the removal of existing fuel tanks and pumps. The NHRA has however been considered in conducting the EIA (Basic Assessment Process) and in compiling the EMPr. Amafa / KwaZulu-Natal Heritage has also been identified as an Interested and Affected Party (I&AP) and has been notified of the proposed project.

3.5 Local Plans and Guidelines

The KwaZulu-Natal Biodiversity Sector Plan 2014 and associated maps informed the characterisation of the baseline ecological environment discussed in Section 9 of this report.

The site does not fall within an area controlled by a local municipality as it is located within the Hluhluwe Game Reserve. The park falls under the administering authority of Ezemvelo KZN Wildlife. The organisation is the provincial agency mandated to carry out biodiversity conservation and associated activities in the KwaZulu-Natal.

4 Project Motivation: Need and Desirability

The proposed project involves the decommissioning and removal of the fuel storage tanks located at the Hluhluwe Game Reserve in KwaZulu-Natal. The tanks are no longer operational; however, the infrastructure remains on site. The applicant wishes to formally close the site by removing the pump islands, pipelines and underground storage tanks. The decommissioning of the site is considered best practice, particularly considering the sensitive nature of the surrounding area. The removal of the infrastructure will prevent any future risk of contamination of the environment.

5 Alternatives

The concept of alternative is defined by the Department of Environmental Affairs[1] as "a possible course of action, in place of another, that would meet the same purpose and need as the development proposal. It is critical that an alternative relates to both these elements of a proposal."

The applicant proposes to remove the existing fuel tanks and associated infrastructure from the site.

Table 5: Alternatives that were identified

Alternative Type	Relevance to the proposal
Site Alternatives	Site alternatives are not applicable to this project as it is an existing facility.
Layout Alternatives	There are no reasonable layout alternatives to the proposed closure. Existing structures such as the pump island will be

[1] DEAT (2004) Criteria for determining Alternatives in EIA, Integrated Environmental Management, Information Series 11, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

	demolished and the area rehabilitated.
Alternative Technologies	Seeing that there will not be any installation of new infrastructure, there are no alternative technologies that can be considered. The decommissioning of the facility will be carried out in accordance with best industry practise and the relevant SANS standards.

5.1 Impacts and Risks associated with alternatives

As per the motivations provided above, no alternatives other than the no-go alternative have been included in this assessment.

5.2 Assessment of the No-Go Option

The site is no longer operational. Should the closure of the facility not be authorised, the applicant would be forced to leave the redundant infrastructure on site. The facility was used for the storage, handling and dispensing of petrol and diesel which are dangerous goods and can have a negative impact if released into the environment. If the activity is not authorised, the infrastructure will remain on site indefinitely. This can pose a safety risk to staff as well as the environment, should the USTs contain residual material that could contaminate the environment.

Due to potential safety and environmental impacts, the No-go Option is not considered to be a viable option.

6 Public Participation

6.1 Description of the Public Participation Process

The following key Interested and Affected Parties (I&APs) have been identified in terms of this application:

- KZN Ezemvelo Wildlife
- Department of Water and Sanitation (DWS)
- Amafa / Heritage KwaZulu-Natal

These I&APs were directly notified of the proposed development via delivery of notification letters, e-mail or fax depending on the contact details available in accordance with Regulation(41)(2)(b) of the EIA Regulations 2014 on 14 July 2017. See Appendix F1.

Two site notices in accordance with Regulation 41(2)(a) and 41(4) of the EIA Regulations 2014, as amended, were erected at the Memorial Gate and the Nyalazi Gate on 14 July 2017. Please refer to Appendix F2.

In accordance with Regulation 41(2)(c) a newspaper advertisement was placed in the Zululand Observer on 14 July 2017 informing potential I&APs of the proposed development and requesting their comment. See Appendix F3.

No neighbouring property owners were identified as the site is within the middle of the game reserve with no neighbours closer than 12km from the site. Furthermore, no members of the public are affected by the proposed decommissioning as the fuel stored was for own use only and not for sale to the public.

Potential I&APs have been made aware of the availability of the Draft BAR for public comment in the notification letters / advertisement / site notices mentioned above.

The Draft BAR will be available for public comment for a period of 30 days, following which it will be updated with comments received on the project. The Final BAR will then be submitted to KZN EDTEA for review and a decision.

6.2 Summary of Comments and Responses

No comments have been received as yet. All comments received on the Draft Report will be addressed individually and incorporated into the Final BAR.

7 Environmental Baseline Description

7.1 Geographical and physical context

7.1.1 Land Use Character of the surrounding area

The facility is located within the Hilltop Camp of the Hluhluwe-Imfolozi Game Reserve in KwaZulu-Natal, which is a provincial nature reserve and formal land-based protected area. The facility is adjacent to the workshops within the staff operational area. The Hilltop Camp itself is located in the northern Hluhluwe sector of the park and comprises a restaurant and chalets for tourist accommodation. The areas surrounding the camp are natural bushveld which provides a habitat for an abundance of animal species (see Figure 2 below).

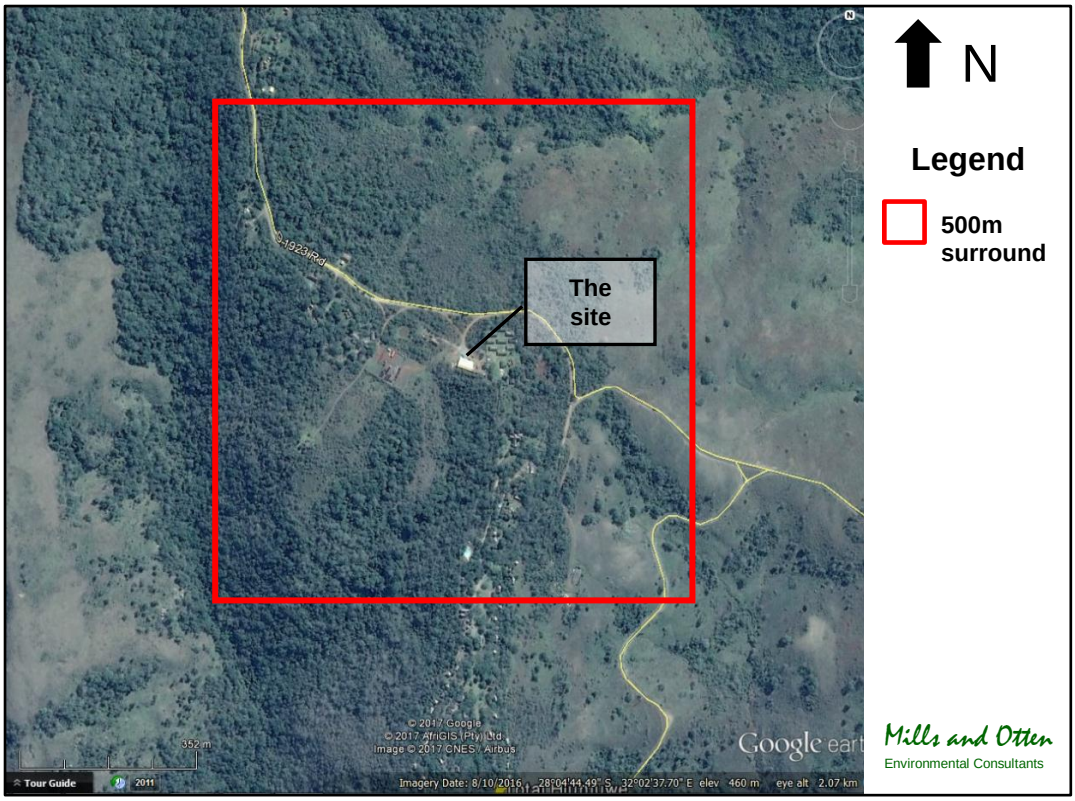

Figure 2: Surrounding land uses

7.1.2 Geology and topography

The site is underlain by shale and sandstone of the Vryheid Formation, Ecca Group, Karoo Supergroup. The topography of the region comprises mainly low, undulating mountains and also some moderately undulating plains and hills.

7.1.3 Agriculture

The project site is not suitable for agricultural production as it forms part of a protected area and provincial nature reserve.

7.1.4 Surface and groundwater

The area falls within the Usuthu to Mhlathuze Water Management Area (WMA) in the W32C quaternary catchment. The Sub-water Management Area is the Mkuze catchment which comprises the drainage areas of both the Mkuze and Hluhluwe Rivers. The Nzimane River, a tributary of the Hluhluwe River, occurs approximately 1.5km south of the site.

According to the Department of Water Affairs Aquifer Vulnerability Map, the bedrock contains a Minor Aquifer System with least vulnerability to contamination from surface activities. it is not expected that the proposed closure would have any significant impact on surface or groundwater sources as there will no longer be an operational phase. Potential impacts that could be anticipated during the decommissioning phase are addressed in the Section 8 of the report.

7.2 Biological Environment

According to Mucina & Rutherford (2006) the site falls within the convergence of two vegetation types, the Zululand Lowveld (SVI23) and the Northern Zululand Sourveld (SVI22), within the Savanna Biome. The vegetation of the Zululand Lowveld comprises various bushveld units ranging from dense thickets of *Dichrostachys cinera* and *Acacia* species to park-like savanna. The dominant vegetation of the Northern Zululand Sourveld comprises wooded grasslands and dense bushveld thickets. Both vegetation units are considered vulnerable and are conserved within the Hluhluwe-iMfolozi Park.

As the application is for the closure of an existing facility within the existing footprint of the workshop area, there will be no clearing of vegetation that will be required. However, considering the sensitive and protected status of the surrounding area, management measures to avoid any impacts need to be implemented during the decommissioning phase of the project.

7.3 Heritage and Cultural Aspects

The site is situated outside the Hilltop Camp of the Hluhluwe-iMfolozi Park in KwaZulu-Natal Province. The park was first proclaimed in 1895, making it the oldest game reserve in Africa, and is also where Zulu kings such as Dingiswayo and Shaka hunted. In the 1960's, animals which had been killed in the early 1800s were re-introduced to the park. The park is famous for Operation Rhino which took place in the 1950s and 60s and continues today. The programme is lauded for saving the southern white rhino from extinction.

The Hilltop Camp therefore has historical significance, however, the proposed removal of the fuels tanks and associated infrastructure is not expected to impact on buildings located within the camp or alter the sense of place. The EMPr includes measures to protect heritage resources in the unlikely event that any are uncovered during decommissioning.

7.4 Socio-Economic Environment

The park covers around 96 000 ha and is not located within the jurisdiction of any local municipality (it is administered by Ezemvelo KZN Wildlife). However, it shares a border with the following five local municipalities:

- Nongoma LM;
- Ulundi LM;
- Big Five Hlabisa LM;
- Mbonambi LM; and
- Ntambanana LM

The municipalities surrounding the Hluhluwe-iMfolozi Park are largely rural in nature and one of the biggest drawcards to the area is to visit the various natural attractions in the region. This includes the Hluhluwe-iMfolozi Park, the iSimangaliso Wetland Park and various private game reserves.

8 Impact Assessment

8.1 Impact Assessment Methodology

Assessment of impacts is based on a synthesis between the Department of Environmental Affairs' (DEAT) Integrated Environmental Management Information (IEM) Series Guideline Documents, and the ISO14001 principle of activities, aspects and impacts.

- Activities are the physical activities that are carried out during design, construction, operations and decommissioning of the proposed development;
- Environmental aspects are elements of the activities that interact with the environment and include biophysical and socio-economic aspects;
- Impacts are defined as changes in the biophysical or socio-economic environment as a result of activities altering existing environmental aspects.

Each impact identified within the assessment phase of the study is given a significance rating, assuming that no management or mitigation measures are implemented. The significance rating is obtained by implementing the following equation:

Significance = (Consequence of impact) x (Probability of impact)

The consequence of an impact is the sum of extent, duration, severity and degree of irreplaceable loss (sensitivity) of the resource. The significance of an impact can be positive or negative, and is indicative of the level of management and/or mitigation which needs to be implemented to either reduce the impact significance of adverse impacts to acceptable levels, or to enhance the significance of positive impacts.

If an impact is rated as "unacceptable impact" it may deem the development impracticable if the impact cannot be mitigated to acceptable levels. Once the initial significance of a potential impact has been determined, mitigation measures are proposed for those impacts that are significant. The impacts are then rated again, assuming that mitigation is implemented successfully.

There is some level of risk that the mitigation proposed will not be implemented by a developer / applicant / contractor, (due to lack of funds, communication gaps, ignorance etc.). A risk factor has therefore been included in the impact assessment, which evaluates the risk of mitigation not being implemented, based on the complexity and expense of implementing the mitigation measures, and whether or not the mitigation measure is common practice. It is important to note that the mitigation measures included in this impact assessment have been incorporated into the EMPr, which will become legally binding on the applicant upon approval.

The holder of the authorization shall be responsible for ensuring compliance with the conditions of the EMPr and environmental authorization by any person acting on his or her behalf, including but not limited to an agent, subcontractor, employee or person rendering a service to the holder of the authorization.

The significance of the impacts will be determined through a synthesis of the criteria below:

Description	Score
Extent: Describes the physical footprint of the impact	
Activity footprint or site only.	1
Impacts on neighbouring properties (within 100 meters of the site).	2
Impacts on the entire neighbourhood or town.	3
City-wide impact.	4
Impacts beyond the administrative boundary	5
Duration: describes the lifetime of the impact	
Immediate short-term (less than 3 months)	1
Construction or decommissioning period (less than 1 year).	2
More than 1 but less than 5 years.	3
For the life of the operation	4
Permanent – the impact cannot be considered transient.	5
Intensity of impact on resource (Magnitude)	
Natural processes are not affected	1
Environmental aspect is altered, but functions and processes continue in a modified way.	2
Function and/or processes of the affected environment is disturbed to an extent where it temporarily ceases	3
Function and/or processes of the affected environment is disturbed to an extent where it permanently ceases, but with no severe consequence.	4
Function and/or processes of the affected environmental aspect is disturbed to an extent where consequences are disastrous.	5
Sensitivity of the environmental aspect	
Not sensitive - widespread, intact, not of concern to I&APs	1
Somewhat sensitive: not totally unique, of value to some I&APs but not the majority,	2
Moderately sensitive: Contains unique features, under threat and/or of value to some stakeholders	3
Moderate to highly sensitive: pristine, rare, under threat and valuable to the community	4
Highly sensitive: protected by legislation, pristine, unique, valued by community	5
Probability: describes the likelihood that the impact would occur	
Improbable	1
Possible but unlikely	2
Probable	3
Highly probable	4
Definite	5

Once the impact has been assessed using the above significance categories, a rating is calculated. The rating indicates the significance of the impact as illustrated by the table below.

Impact Ratings and Significance

	Score	Significance
Negative Impact	>80	Fatal flaw (unacceptable impact)
	60 to 79	High significance
	40 to 59	Moderate significance

	20 to 39	Low significance
	19 to 0	Insignificant
Positive Impact	0 to 29	Low significance
	30 to 59	Moderate significance
	>60	High significance

Risk Assessment

There is some level of risk that the mitigation proposed will not be implemented by a developer / applicant / contractor, (due to lack of funds, communication gaps, ignorance, etc.). A risk factor has therefore been included in the impact assessment, which evaluates the risk of mitigation not being implemented, based on the complexity and expense of implementing the mitigation measures, and whether or not the mitigation measure is common practice. It is important to note that the mitigation measures included in this impact assessment have been incorporated into the EMPr, which will become legally binding on the applicant upon approval.

The holder of the authorization shall be responsible for ensuring compliance with the conditions of the EMPr and environmental authorization by any person acting on his or her behalf, including but not limited to an agent, subcontractor, employee or person rendering a service to the holder of the authorization.

The following classification of risk is used:

Low The mitigation proposed is standard practice in the industry.

Medium The mitigation proposed is not standard practice or is often ignored by Contractors, but is not difficult or complicated to implement.

High The mitigation proposed is expensive, not standard practice and/or complicated.

8.2 Impact Assessment

Table 6 describes the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the proposed decommissioning of the facility.

Potential impacts for the operational phase of the project will not apply to the closure of the facility.

Table 6: Impact assessment for the decommissioning phase

Environmental Aspects	Potential impacts:	Significance rating (positive or negative):	Proposed mitigation:	Significance rating after mitigation:	Risk of the impact and mitigation not being implemented
DECOMMISSIONING PHASE The decommissioning of the site will include construction activities involved with the removal of the underground storage tanks, pumps and associated infrastructure.					
Loss of Habitat and Biodiversity	Although the site is located within a game reserve and protected area, there will be no clearing of vegetation required. The site comprises underground storage tanks, pipelines and pumps within the existing facilities. This infrastructure will be removed from site and the area rehabilitated. No direct impacts on habitat and biodiversity are expected. However, considering the sensitive nature of the area, the decommissioning phase does need to be carried out with care to avoid impacts on the surrounding area.	**Moderate (48)** **Negative**	All decommissioning activities should be confined to the demarcated project site. No vehicles, material storage, laydown areas, etc. should be allowed outside the project property boundary. Removal of vegetation from areas outside the development footprint shall be prohibited. The removal or picking of any protected or unprotected plants shall not be permitted. Exotic and invader species which are likely to become established on bare soils during the decommissioning phase should be managed and removed to prevent them from becoming established and spreading to adjacent areas. Should vegetation be used for rehabilitation, Ezemvelo KZN Wildlife must be consulted, prior to vegetation establishment.	**Negligible (10)** **Negative**	Medium. The mitigation proposed is standard practice in the industry; however, it may not be followed by contractors. It is not difficult or complicated to implement.
Impact on Flora	According to Mucina & Rutherford (2006) the site falls within the convergence of two vegetation types, the Zululand Lowveld (SVI23) and the Northern Zululand Sourveld (SVI22), within the Savanna Biome. The vegetation of the Zululand Lowveld comprises	**Moderate (48)** **Negative**	Removal of vegetation / plants from surrounding natural areas shall be prohibited. The removal or picking of any plants shall not be permitted. All decommissioning activities should be	**Negligible (18)** **Negative**	Medium. The mitigation proposed is standard practice in the industry; however, it may not be followed by contractors. It is not difficult or complicated to

Environmental Aspects	Potential impacts:	Significance rating (positive or negative):	Proposed mitigation:	Significance rating after mitigation:	Risk of the impact and mitigation not being implemented
	various bushveld units ranging from dense thickets of *Dichrostachys cinera* and *Acacia* species to park-like savanna. The dominant vegetation of the Northern Zululand Sourveld comprises wooded grasslands and dense bushveld thickets. Both vegetation units are considered vulnerable and are conserved within the Hluhluwe-iMfolozi Park. The vegetation of the region is known to be diverse and species rich. There will be no site clearing required for the project. Potential impacts on flora during the decommissioning phase relate to disturbance caused by decommissioning crew and subsequent encroachment of invasive, exotic and encroacher plant species.		confined to the demarcated project site. No vehicles, material storage, laydown areas, etc. should be allowed outside the project footprint. No declared alien and invasive plants shall be allowed within the development area. Rehabilitation of the proposed development shall not make use of any common weed or type of plant with known invasive characteristics. Should any part of the site be re-vegetated, the applicant is to liaise with Ezemvelo KZN Wildlife prior to rehabilitation activities to ensure that the requirements of the organization are met. The facility is adjacent to the staff housing access road and it is believed that no re-vegetation will be required.		implement.
Impact on Fauna	The site is located within an area that is renowned for its richness in faunal species and is mainly visited with the sole purpose of viewing them in their natural habitat. Although the proposed project will not result in any habitat loss for fauna, disturbance caused by decommissioning crew in the area can potentially impact on fauna.	**Moderate (45)** **Negative**	All decommissioning activities should be confined to the demarcated project footprint. No encroachment on the surrounding natural areas is to be allowed. No vehicles, material storage, laydown areas, etc. to be allowed outside the development boundary. No faunal species are to be removed, killed, maimed or injured during the decommissioning activities.	**Negligible (18)** **Negative**	Medium. The mitigation proposed is standard practice in the industry; however, it may not be followed by contractors. It is not difficult or complicated to implement.

Environmental Aspects	Potential impacts:	Significance rating (positive or negative):	Proposed mitigation:	Significance rating after mitigation:	Risk of the impact and mitigation not being implemented
Surface Water	The area falls within the Usuthu to Mhlathuze Water Management Area (WMA) in the W32C quaternary catchment. The Sub-water Management Area is the Mkuze catchment which comprises the drainage areas of both the Mkuze and Hluhluwe Rivers. The Nzimane River, a tributary of the Hluhluwe River, occurs approximately 1.5km south of the site. Decommissioning activities could potentially result in surface water quality deterioration if potentially polluting substances used during the decommissioning process (e.g. oil, diesel, cement, etc.) are not properly managed. These substances could result in pollution of water resources through spillages, leakage, accidents or incorrect disposal of used containers or waste. In addition, sediment carried in surface water runoff is also considered as resulting in the deterioration of water quality by increasing the sediment load. Pollution of stormwater may also occur as a result of unmanaged litter or waste generated on site during the decommissioning period.	**Moderate (52)** **Negative**	The use of potentially polluting substances on site should be strictly controlled and only handled in designated areas under the supervision of competent and trained personnel. Diesel and oil should be stored in a way that will allow any spillages to be contained (e.g. impermeable bund areas), and spills should be cleaned up with approved absorbent materials. These should be kept in sufficient quantities on site to deal with small spills. Absorbent material and contaminated soil should be disposed of at a registered hazardous waste site. During decommissioning, maintenance of vehicles and machinery must be undertaken off-site at a recognized workshop. In the event of fuel or oil spillage, appropriate steps must be taken to remove all hydrocarbon product. All fueling of vehicles must be undertaken on an impermeable surface or over drip trays. In addition, measures should be taken to ensure no sediment leaves the site. Such measures could include silt nets along low-lying areas to capture any sediment caught in stormwater runoff. Points of ingress and egress onto public roads must be cleared of any dust or mud. Should cement be used on site, the following guidelines apply: Carefully control all on-site	**Negligible (16)** **Negative**	Low. The mitigation proposed is not complicated and easy to implement.

Environmental Aspects	Potential impacts:	Significance rating (positive or negative):	Proposed mitigation:	Significance rating after mitigation:	Risk of the impact and mitigation not being implemented
			operations that involve the use of cement and concrete mixing to single sites where possible; use plastic trays or liners when mixing cement and concrete – do not mix cement and concrete directly on the ground; dispose of all visible remains of excess cement and concrete after the completion of tasks; dispose of in the approved manner (solid waste concrete may be treated as inert rubble, but wet cement and slurry, as well as cement powder must be treated as hazardous waste). A stormwater management plan must be developed and implemented.		
Groundwater	The general project area is underlain by shale and sandstone of the Vryheid Formation, Ecca Group, Karoo Supergroup Published geohydrological maps show that the bedrock contains a Minor Aquifer System with least vulnerability to contamination from surface activities. Potential impact on groundwater may occur during decommissioning activities if substances, such as hydrocarbons, associated with machinery and equipment, are allowed to continuously leak onto soil and potentially leach into the groundwater.	**Moderate (45)** **Negative**	All development activities must remain within the demarcated decommissioning area. Mitigation and management measures include the safe handling of all hydrocarbon products as stipulated in the EMPr. In addition, no cement mixing is to occur directly on the ground, and any cement or hydrocarbon spills should be cleared away immediately.	**Negligible (22)** **Negative**	Low. The mitigation proposed is standard practice in the industry.
Soil Pollution and	Soil erosion, loss of topsoil and deterioration of soil quality are the main potential impacts	**Moderate (48)**	To minimize the risk of erosion, the extent of the disturbed area and bare soil must be	**Negligible (18)**	Low. The mitigation proposed is

Environmental Aspects	Potential impacts:	Significance rating (positive or negative):	Proposed mitigation:	Significance rating after mitigation:	Risk of the impact and mitigation not being implemented
Erosion	that could be caused during the decommissioning phase. Eroded sediment can be transported to waterways where they settle in dams and other attenuation facilities, reducing capacity over time and causing deterioration in water quality by increasing the sediment load. Soil pollution may occur where hydrocarbons or other chemicals are not adequately managed during storage and handling and are allowed to spill into the soil. In addition, the mixing of cement or concrete directly on the ground will also result in soil contamination.	**Negative**	minimized. It is recommended that prior to the commencement of decommissioning activities, the entire project footprint be fenced off and clearly demarcated. All decommissioning activities should be contained within this demarcated footprint. Storage of potential pollutants such as fuel, oil, cement, etc. should be confined to a sealed surface with a bund wall to prevent soil contamination from accidental leaks or spills. The EMPr includes recommendations for handling of hydrocarbons on site, as well as mitigation measures in the event of accidental leakage or spillage. Cleaning of cement on equipment or tools must be done using appropriate cleaning trays. A tank excavation assessment should be undertaken once the tanks are removed to determine if there is any contamination of the surrounding soils and whether further steps for rehabilitation are required.	**Negative**	standard practice in the industry.
Air Quality	Dust will be generated during normal decommissioning activities and has the potential to create nuisance. The effect on air quality is expected to be localized and minor, as well as of short duration as the decommissioning phase is temporary. The contribution of emissions caused by exhaust fumes from the associated equipment	**Low (30)** **Negative**	Stockpiles of material and spoils should be positioned such that they are not exposed to wind erosion or drainage lines. Vehicles transporting materials that can be blown off must be covered with tarpaulin. The application of best management practices for dust suppression during the decommissioning phase will also aid in	**Negligible (16)** **Negative**	Low. The mitigation proposed is standard practice in the industry.

Environmental Aspects	Potential impacts:	Significance rating (positive or negative):	Proposed mitigation:	Significance rating after mitigation:	Risk of the impact and mitigation not being implemented
	and vehicles will be negligible.		reducing air pollution. Emissions caused by exhaust fumes can be minimized by ensuring regular maintenance of decommissioning vehicles and equipment, and ensuring that they are in good working order.		
Noise Disturbance	The decommissioning phase will result in a temporary increase in noise levels due to moving machinery and use of equipment to demolish and remove structures. Sensitive receptors in the area include tourists and holidaymakers as well as animals which roam the area.	**Moderate (48)** **Negative**	The developer should ensure that all machinery / equipment used are regularly maintained to reduce potential noise disturbance. Where applicable, muffling devices should be fitted to vehicles and machinery to prevent excessive noise generation. The decommissioning camp and laydown area must be carefully positioned so as to least impact on surrounding land users. Activities will take place during the day time. No decommissioning activities must occur on Sundays or public holidays.	**Low (30)** **Negative**	Low. The mitigation proposed is standard practice in the industry.
Traffic Impact	The decommissioning activities will require the movement of construction vehicles and machinery on local road networks to access the project site. The movement of vehicles may impact on local traffic movements within the camp. This will, however, be only of a temporary nature during the decommissioning phase.	**Low (33)** **Negative**	Construction vehicle movement should be restricted so as not to coincide with busy traffic periods, thereby reducing the potential impact on other users of the roads within the park Appropriate signage should be erected informing motorists of any potential diversions, if required. If necessary, an employee should be used to divert traffic away (red flag).	**Low (27)** **Negative**	Low. The mitigation proposed is standard practice in the industry.

Environmental Aspects	Potential impacts:	Significance rating (positive or negative):	Proposed mitigation:	Significance rating after mitigation:	Risk of the impact and mitigation not being implemented
Visual Impact	Generally, the following temporary decommissioning activities are considered in terms of visual impact: • Presence of storage and stockpile area; • Decommissioning camp; and • Movement of machinery and vehicles on local roads. The visual impact of the decommissioning phase is expected to be limited and temporary in nature.	**Moderate (44)** **Negative**	The entire decommissioning site shall be fenced and screened from the surrounding areas. Temporary ablution facilities must provide adequate privacy. The decommissioning camp and laydown area must be carefully positioned within the development footprint. Good housekeeping must be implemented on site and the property must be kept tidy and clean (no litter, etc. strewn around).	**Low (27)** **Negative**	Low. The mitigation proposed is standard practice in the industry.
Safety	The use of equipment, including the movement of the decommissioning crew and vehicles, increases the risk to safety of the people working on the site, visitors of the park and wildlife. The potential for accidents among operators exists if machinery is not handled properly. The lack of enforcement of health and safety regulations could impact negatively on workers. It will be the duty of the site manager to compile and enforce a health and safety plan that should encompass the effective management of the decommissioning site to prevent impacts on the public and natural resources.	**Low (39)** **Negative**	To limit the risk of accidents, safety procedures must be put in place and enforced by the site manager to ensure that vehicles and machinery are only operated by trained and authorized employees. The site and workers are to be managed in strict accordance with the OH&S Act and the National Building Regulations. Ensure that the correct PPE is issued to, and used by, employees. The site should be completely fenced off prior to the commencement of decommissioning activities and the areas of no access should be demarcated. Warning signs identifying the location as a decommissioning site and prohibiting unauthorized access should be placed on the perimeter fence. Access to the site should be	**Negligible (18)** **Negative**	Low. The mitigation proposed is standard practice in the industry.

Environmental Aspects	Potential impacts:	Significance rating (positive or negative):	Proposed mitigation:	Significance rating after mitigation:	Risk of the impact and mitigation not being implemented
			limited to the workforce only. In addition, the workforce must be restricted to the confines of the project footprint during working hours and be prohibited from entering surrounding natural areas.		
Cultural or Historical Sites	The site has been previously developed, therefore the chances of finding any artefacts on site is highly improbable. However, the EMPr does include a protocol should any sub-surface artefacts be uncovered during the removal of the infrastructure on site.	**Low (26)** **Negative**	The provisions of the National Heritage Resources Act will apply. If any sign of a heritage or cultural site is unearthed during excavations, then all activities must cease until a heritage specialist has been consulted and has had the opportunity to investigate such finds. The procedures to follow are included in the EMPr.	**Negligible (11)** **Negative**	Medium. The mitigation proposed is standard practice in the industry; however, it may not be followed by contractors. It is not difficult or complicated to implement.
Waste Generation	The proposed decommissioning activities will result in the generation of solid waste streams. Solid waste that is not correctly managed may result in pollution of water, air as well as soil resources.	**Moderate (52)** **Negative**	Ensure that rubble and waste is sorted on site and that recyclable material is separated from disposable waste. Sufficient containers must be made available on site to handle litter, general waste and builder's rubble. Waste must be removed on a regular basis and disposed of at an approved and permitted site. Recyclable materials (such as wood, paper or plastics) should be taken to a registered recycler. Waste manifests and records of quantities of waste must be kept on site. Environmental awareness training should include a section on the impacts of waste generation and improper waste management.	**Negligible (18)** **Negative**	Medium. The mitigation proposed is standard practice in the industry; however, it may not be followed by contractors. It is not difficult or complicated to implement.

8.3 Cumulative impacts

The 2014 EIA Regulations, as amended (GN. R 326 of 07 April 2017) define “cumulative Impact” in relation to an activity as the “past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.”

A cumulative impact may be an additive impact or an interactive impact. Additive impacts arise when an activity adds to an impact which is caused by other similar activities. Interactive impacts arise when a cumulative impact is caused by different impacts that combine to form a new kind of impact. In the case of interactive impacts, the net adverse cumulative impact may be less than the sum of the individual impacts (countervailing) or the net adverse cumulative impact may be greater than the sum of the individual impacts (synergistic). Cumulative impacts can therefore arise from one or more activities associated with a proposed development, or any other developments in the surroundings areas.

The proposed development is associated with the decommissioning of existing fuel tanks and associated infrastructure that were used for the refuelling of staff vehicles. Potential impacts associated with the decommissioning phase for the closure have been identified and mitigation measures to reduce the significance of impacts have been proposed. These impacts will be of limited duration and are therefore not expected to contribute cumulatively in any significant manner. Furthermore, there is no operational phase for this project; therefore there will be no expected impacts that can contribute to cumulative impacts once the decommissioning of the site has been completed.

9 Environmental impact statement

This application for Environmental Authorisation and Draft Basic Assessment Report is being submitted for the proposed decommissioning of fuel tanks located in the Hluhluwe Game Reserve. The proposed project involves the removal of the infrastructure related to the operation of the facility, i.e. underground storage tanks, pump islands and pipelines. The primary aim of the proposed closure is to remove the structures so that it does not pose a safety or environmental risk in future.

Potential negative impacts that were identified relate primarily to risk of disturbance to surrounding fauna and flora, water and soil pollution, erosion and sedimentation, noise and air quality impacts, waste generation and safety concerns. These all relate to the decommissioning of the infrastructure on site and there will be no operational phase of the project. The management and mitigation measures identified in this report are expected to minimize the significance of these potential impacts to an acceptable level either by reducing the magnitude of potential impacts (by limiting the duration, scale or intensity with which impacts can occur) or by reducing the probability / likelihood that an impact would occur.

The Impact Assessment Tables provided in Appendix H elaborate on the types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

The implementation of the mitigation measures identified in this report as well as the EMPr (Appendix E) will reduce the significance of the identified impacts to acceptable levels.

The Table below presents a summary of the Impact Assessment:

Table 7: Summary of impact assessment

Activity	Aspect	Impact	Significance	
IMPACT DESCRIPTION			IMPACT BEFORE MITIGATION	IMPACT AFTER MITIGATION
DECOMMISSIONING PHASE				
Presence of workers on site	Loss of Biodiversity and Habitat	Loss / degradation of habitat and biodiversity. Disturbed areas may temporarily provide the opportunity for alien and invasive species encroachment	Moderate	Negligible
Presence of workers on site	Flora	Species destruction due to harvesting, fires etc. as a result of temporary decommissioning workers on the site	Moderate	Negligible
Presence of workers on site	Fauna	Disturbance to habitat and safety of fauna near the decommissioning site	Moderate	Negligible
Potential spills onto bare soils	Surface water	Surface water pollution from spills of hazardous chemicals onto soil. Increased sediment loads.	Moderate	Negligible
Potential spills onto bare soils	Groundwater	Groundwater pollution from spills of hazardous chemicals onto soil.	Moderate	Negligible
Compaction of surfaces	Soil Pollution and Erosion	Soil erosion and sedimentation of downstream surface water due to compaction of surfaces.	Moderate	Negligible
Movement of vehicles & personnel	Air Quality	Dust generation and emissions due to vehicle movement, equipment operation	Low	Negligible
Movement of vehicles & personnel	Noise	Increase in ambient noise levels due to vehicles, equipment and people on site	Moderate	Low
Vehicle movement	Traffic	Deterioration of road infrastructure due to vehicle movement to and from the site. Safety on roads due to movement of vehicles to and from the site	Low	Low
Presence of contractors camp	Visual Impact	Impact on aesthetics from the presence of the contractors camp, equipment and workers on site	Moderate	Low

Decommissioning activities	Safety	Public and worker safety due to general decommissioning activities	Low	Negligible
Excavations	Archaeology	Destruction of Heritage Resources possibly present (sub-surface) due to excavations	Low	Negligible
Decommissioning activities	Waste	Generation of waste from decommissioning activities that can cause pollution if not controlled	Moderate	Negligible

10 Assumptions, Uncertainties and Gaps in Knowledge

The impact assessment was conducted based on available information sources. All information provided by the applicant was assumed to be a correct and true reflection of the applicant's intentions.

It is important to note that this is the Draft BAR and that this report has not yet been reviewed by I&APs. Input from I&APs are seen as a valuable source of knowledge in conducting impact assessments and this report will thus only be finalized after I&APs have had sufficient time to comment on this report (30 days).

11 Recommendation of the EAP

- The proposed decommissioning is aimed at ensuring that the infrastructure related to the operation of the USTs is removed from site in an appropriate manner which takes the surrounding environment into consideration.
- This draft BAR has identified potential impacts associated with the proposed upgrade. All of the identified negative potential impacts can be mitigated to acceptable levels.
- This report will be made available to Interested and Affected Parties in order to ensure that the views of the people who may be affected by the proposed upgrades are taken into account in the decision-making process. All comments received will be considered and incorporated into the final BAR.

For the reasons mentioned above it is the recommendation that the proposed project be granted environmental authorization subject to the conditions stipulated in the EMPr and the outcomes of the public participation process which is still underway.

11.1 Period of validity

- The decommissioning phase of the proposed upgrades will commence within 1 years of the authorization being granted.
- The decommissioning phase will not exceed a period of 6 months.

12 References

DEAT. (2004). Scoping, Integrated Environmental Management, Information Series 2. Pretoria: Department of Environmental Affairs and Tourism (DEAT).

DEAT. (2002). Stakeholder Engagement, Integrated Environmental Management, Information Series 3. Pretoria: Department of Environmental Affairs and Tourism (DEAT).

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Mucina, L., & Rutherford, M. (2006). The Vegetation of South Africa, Lesotho and Swaziland. Pretoria: Strelitzia 19. South Africa National Biodiversity Institute.

Plomp, H. (2004). A process for assessing and evaluating environmental management risk and significance in a gold mining company., (p. Annual National Conference of the International Association for Impact Assessment: South African Affiliate).

13 Undertaking of the EAP

I ……Kirstin Otten……, as the appointed environmental assessment practitioner ("EAP") hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I:

- other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity;
- have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- will ensure compliance with the EIA Regulations 2014;
- will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the application;
- will take into account, to the extent possible, the matters listed in regulation **18** of the regulations when preparing the application and any report, plan or document relating to the application;
- will disclose to the proponent or applicant, registered interested and affected parties and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority or the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority (unless access to that information is protected by law, in which case I will indicate that such protected information exists and is only provided to the competent authority);
- will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- declare that all the particulars furnished by me in this form are true and correct;
- am aware that it is an offence in terms of Regulation 48 to provide incorrect or misleading information and that a person convicted of such an offence is liable to the penalties as contemplated in section 49B(2) of the National Environmental Management Act, 1998 (Act 107 of 1998).

_____

Signature of the environmental assessment practitioner

Mills and Otten Environmental Consultants

Name of company

_____

Date

14 Appendixes

Appendix A – Locality Map

Appendix B – Site photographs

Appendix C – Facility Illustration

Appendix D – CV of the EAP

Appendix E – EMPr

Appendix F – Public Participation Information

Appendix F1 – Communication to and from I&APs

Appendix F2 – Site Notice

Appendix F3 – Newspaper Advertisement

Appendix F4 – List of I&APs

Appendix G – Impact Assessment Tables

Appendix A – Locality Map

1:50 000 Topo Sheet:2832AA

0 0.2 0.4 0.6 0.8 1 km

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Mills & Otten

Appendix B - Site Photographs

Proposed Removal of Fuel Tanks from the Conservation Area, Hluhluwe Game Reserve, KwaZulu-Natal - photographs taken on 14 July 2017

Photo 1: View of pumps.

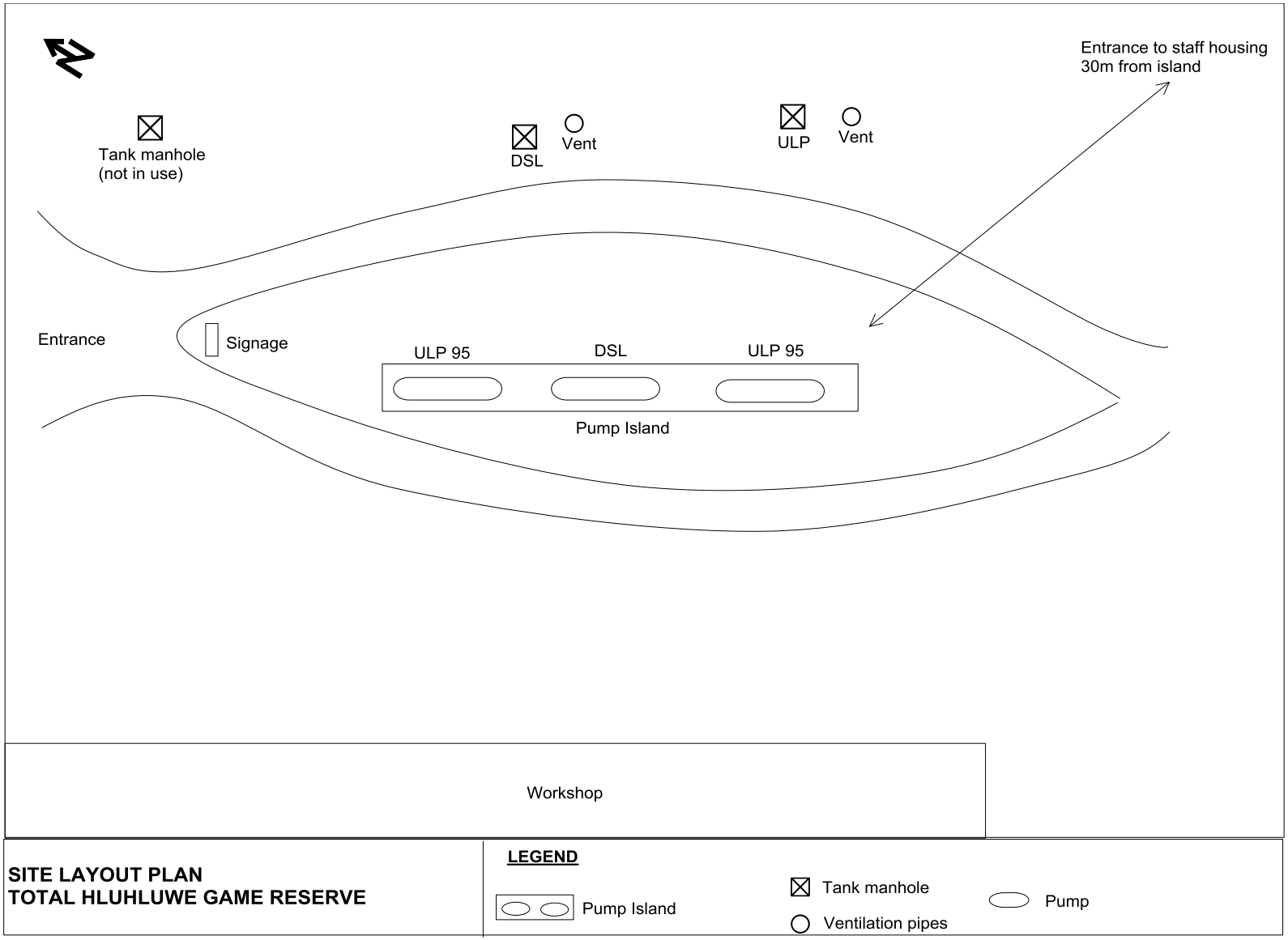
Photo 2: Pump islands with vents for tanks 1 and 2 in the foreground

Photo 3: Image showing the current condition of the pump islands and canopy with workshops in the background


Photo 4: Tank manhole 1 and vent

Photo 5: Tank manhole 3 and vent

Appendix C – Facility Illustration



SITE LAYOUT PLAN
TOTAL HLUHLUWE GAME RESERVE

LEGEND

- Pump Island
- Tank manhole
- Ventilation pipes
- Pump

Appendix D – CV of the EAP

CURRICULUM VITAE

NAME : KIRSTIN MARY OTTEN (Pr.Sci.Nat.)

EDUCATION : University of the Witwatersrand

QUALIFICATIONS : 1981 B.Sc. (Chemistry, Biochemistry, Genetics)

MEMBERSHIP : Institute of Waste Management, Member IAIAsa, EWT

REGISTRATION : Professional Environmental Scientist (Pr.Sci.Nat.) 400088/97

LANGUAGES : English and Afrikaans.

CAREER : 1982 - 1983 Research Scientist at Central Laboratory, South African Breweries. 1983 - 1987 Employed in various positions by Waste-tech (Pty) Ltd. Positions held included Laboratory Manager, Hazardous Waste Officer and Environmental Protection Manager, with EIA and auditing responsibilities as well as government liaison for permitting purposes. 1987 - 1992 Freelance environmental consultant.
1992 - Present. Director, Mills & Otten Environmental Consultants (Pty) Ltd.

EXPERIENCE

Waste Management: Responsible for the operation of hazardous waste facilities including laboratory; identification of new disposal sites; development of environmental auditing systems and personnel training. Consulting work done on numerous projects such as the identification, investigation, design, commissioning, operation, closure and permitting of landfill sites as well as strategy development for metropolitan areas and Town Councils. Waste minimisation strategies developed for industrial clients.

Impact Assessments: Numerous environmental impact assessments have been undertaken for different development proposals. Impact matrices are developed for each individual project and detailed public participation is undertaken.

Environmental Auditing: Ongoing auditing of waste disposal sites as well as industrial installations. EMP auditing and monitoring is undertaken for EIA projects. Developed a specific audit procedure for petrochemical depots and service stations which include determination of relative risk to the environment. This had been extended to include due diligence audits and environmental management systems in accordance with ISO 14001. Training of personnel in environmental aspects of work procedures has been ongoing. Audits are conducted in terms of current legislation across all disciplines of relevant Acts and Regulations.

Contamination Assessments: Monitoring of contamination of surface and groundwater as well as soils. Extensive investigation of the nature and significance of contamination and determination of suitable remediation methodology, such as bioremediation or chemical treatment.

Research: Assessment of different analytical techniques, specifically for petroleum contamination, in association with local and international laboratories. Investigation into the specific chemistry of petroleum products in water and the environmental consequences thereof.

Licensing: Air Emission license and Water Use license applications on behalf of various clients for existing and proposed facilities.

Appendix E – EMPr

TOTAL SOUTH AFRICA (PTY) LTD

PROPOSED REMOVAL OF FUEL TANKS FROM THE CONSERVATION AREA, HLUHLUWE GAME RESERVE, KWAZULU-NATAL

ENVIRONMENTAL MANAGEMENT PROGRAMME

By

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TOTAL SOUTH AFRICA (PTY) LTD
PROPOSED REMOVAL OF FUEL TANKS FROM THE CONSERVATION AREA, HLUHLUWE GAME RESERVE, KWAZULU-NATAL

ENVIRONMENTAL MANAGEMENT PROGRAMME

JULY 2017

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TOTAL SOUTH AFRICA (PTY) LTD
PROPOSED REMOVAL OF FUEL TANKS FROM THE CONSERVATION AREA, HLUHLUWE GAME RESERVE, KWAZULU-NATAL

ENVIRONMENTAL MANAGEMENT PROGRAMME

JULY 2017

1 INTRODUCTION

The applicant (Total South Africa (Pty) Ltd) intends to remove fuel tanks located within the conservation area in Hluhluwe Game Reserve, KwaZulu-Natal Province. The proposed closure involves the removal of all infrastructure that was used for the operation of the tanks. This includes 2 x 14m^3 underground storage tanks used for fuel, pump islands and pipelines.

The proposed removal requires Environmental Authorisation in terms of the National Environmental Management Act (Act 107 of 1998) and the EIA Regulations (2014) as amended. This draft Environmental Management Programme (EMPr) forms part of the Environmental Authorisation Application as submitted to the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA).

2 STRUCTURE OF THE EMPR

The required content of the EMPr is prescribed in Appendix 4 of GN 982. Table 1 summarizes the required content and cross-references those requirements to relevant sections in this report.

Table 1: Contents of the EMPr

No	Requirement	Section of this report
1 (1)	An EMPr must comply with section 24N of the Act and include -	
(a)	Details of (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare and EMPr, including a Curriculum Vitae	Refer to Section 3 and Appendix A
(b)	A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description.	Refer to Section 4
(c)	A map at an appropriate scale which superimposes the proposed activity, its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers.	See Figure 1
(d)	A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including – (i) Planning and design; (ii) Pre-construction activities; (iii) Construction activities	Refer to Section 5

	(iv) Rehabilitation of the environment after construction and where applicable post-closure; and (v) Where relevant, operation activities;	
(e)	A description and identification of impact management outcomes required for the aspects contemplated in paragraph (d)	Refer to Section 5
(f)	A description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	Refer to Table 3 to Table 6
(g)	The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Refer to Section 6
(h)	The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Refer to Table 3 to 6
(i)	An indication of the persons who will be responsible for the implementation of the impact management actions	Refer to Table 3 to 6
(j)	The time periods within which the impact management actions contemplated in paragraph (f) must be implemented	Refer to Table 3 to 6
(k)	The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f)	Refer to Section 6
(l)	A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations	Refer to Section 6.2
(m)	An environmental awareness plan describing the manner in which – (i) The applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) Risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Refer to Section 7
(n)	Any specific information that may be required by the competent authority.	N/A

The EMPr is a flexible document and should be amended accordingly once authorization has been obtained to ensure that all the conditions stipulated in the Environmental Authorisation (EA) are included within the EMPr and can so be integrated into the management plan.

3 DETAILS OF THE EAP

Mills & Otten Environmental Consultants is the independent environmental consultancy appointed to undertake the Environmental Authorisation (Basic Assessment) Process for the proposed project. The contact details and experience of the Environmental Assessment Practitioner (EAP) are provided in Table 1 below:

Table 2: Contact details of EAP.

Name of EAP:	Kirstin Otten
Company:	Mills & Otten Environmental Consultants (Pty) Ltd
Qualifications:	BSc (Chemistry, Biochemistry, Genetics), over 30 years' experience in the environmental field.
Registrations & Associations:	Pr.Sci.Nat., MIWM, IAIA-SA
Postal Address:	PO Box 84344, Greenside, 2034
Contact number:	011 486 0062
Contact email:	kirstin@millsandotten.co.za

Mills & Otten is a specialist, independent environmental consulting firm. It offers a full range of environmental services, including environmental impact assessments, waste management, pollution monitoring, environmental auditing and geotechnical investigations.

The firm was established in 1992 by engineering geologist, Charles Mills and Kirstin Otten, an environmental scientist, who joined forces to create a company focused on helping clients with environmental challenges. Both partners have substantial experience in environmental consulting. The firm has been involved in numerous projects – specifically in the petrochemical industry – in which bulk fuel depots, service stations, customer installations and road and rail accident sites were audited and investigated.

Ms Otten has over 30 years' experience. Mrs Otten has a B.Sc. (Chemistry, Biochemistry, & Genetics) and is registered as a professional natural scientist with the South African Council for Natural Scientific Professionals (Pr.Sci.Nat.).

4 DESCRIPTION OF THE PROJECT AND ASSOCIATED ASPECTS

Total South Africa (Pty) Ltd, the applicant, wishes to remove fuel storage tanks located in the Hluhluwe Game Reserve in KwaZulu-Natal. The tanks stored petrol and diesel and are connected via pipelines to pump islands that were used for the refuelling of staff vehicles. The facility is more that twenty-five years old and stopped operating one year ago as it was non-compliant with the

relevant SANS codes. Although the facility is no longer used; the infrastructure remains on site and must be formally decommissioned. This includes the removal of 1 x 9000m3 and 2 x 14m3 underground storage tanks (USTs), as well the associated infrastructure such as the pipelines and pump islands.

An environmental impact assessment was undertaken in accordance with the relevant legislation and guidelines. The results of the Impact Assessment are contained in the Basic Assessment Report. The significance of the environmental impacts was assessed based on the nature, probability, extent, duration and magnitude of the impact in the context of environmental sensitivity. Once the significance of the environmental impacts had been assessed, suitable mitigation measures were formulated, and the significance of each potential impact after the implementation of mitigation measures was re-assessed. The residual risk in the event that mitigation measures are not implemented was also considered.

4.1 Project Phases

The proposed closure will comprise the following project phases as follows:

- The Planning and Pre-decommissioning phase (which is also the phase during which the necessary licenses and authorizations are applied for)
- The Decommissioning phase which should commence within 1 year of the environmental authorization being granted, and which should not exceed a period of 6 months.

There will be no operational phase involved with this project.

4.1.1 Planning/ Pre-decommissioning phase

This phase of the project poses low risk to the physical and social environment which may be impacted upon as activities are in preparation for on-site activities and very few activities can legally occur on site during this phase. Please refer to Table 3 for the impacts and mitigation measures identified for the planning phase of the proposed project.

4.1.2 Decommissioning Phase

Decommissioning activities could adversely affect the environment. Impacts and mitigation measures identified for the decommissioning phase of the proposed closure are presented in Table 4. The EMPr (upon approval of the environmental authorization) should be made binding on all contractors working on site, and should thus form part of contract data so that potential contractors can take the provisions of the EMPr into account when providing quotes. At least one copy of the EMPr must be kept on site throughout the decommissioning phase.

The decommissioning phase of the development will involve temporary fencing the site for security purposes and establishing the decommissioning camp and associated storage facilities

The environmental aspects which may be impacted by these activities include fauna and flora disturbance, surface and ground water, soils, air quality, traffic, safety and security. The project may generate off-site impacts due to the generation of dust, noise and waste on the site being disposed elsewhere. In the absence of any mitigation, the significance of the environmental impacts associated with decommissioning varies from Low to Moderate. The implementation of mitigation and management measures lower the significance of potential impacts to Negligible or Low.

5 IMPACT MANAGEMENT OBJECTIVES

The impact management objectives of this EMPr are to limit or minimize the consequence of an identified impact (by shortening its duration, limiting its extent or intensity) or to minimize the likelihood that an impact would occur. The specific impact management objectives for all phases of the development include:

- Comply with applicable environmental legislation, regulations, by-laws, standards and guidelines.
- Demonstrate to authorities and stakeholders that activities associated with the development (throughout all project phases) comply with legislated environmental quality objectives and achieve good environmental performance.
- Encourage the implementation of environmental best-practice principles to ensure sound environmental practices are implemented, monitored and adapted based on the outcomes of monitoring programmes and the principles of continuous improvement of environmental performance.
- Develop and implement sound waste management, based on the hierarchy of prevention, minimization, recycling / re-using, treatment and environmentally acceptable disposal if necessary.
- Provide practical environmental guidelines to:
    - Avoid or minimize disturbance of the natural environment;
    - Protect the quality and quantity of water resources;
    - Prevent or minimize pollution and the potential effects of off-site pollution caused by incorrect waste management or pollution containment measures;
    - Promote sustainable development;
    - Prevent soil erosion and loss of topsoil, and encourage re-instatement of viable soils and landscaping after decommissioning;

- Promote the sustainable use of resources and prevent unnecessary waste (e.g. of water, electricity etc.)

6 COMPLIANCE MONITORING

Effective implementation of the management and mitigation measures outlined in the BAR and this EMPr (as well as the Environmental authorization, if / when granted) is key to obtaining the environmental goals and targets outlined in this EMPr. Compliance monitoring is thus vital to ensure that the environmental requirements described in this EMPr are implemented on site.

Compliance monitoring also allows for ongoing impacts to be tracked so that the effectiveness of the mitigation can be measured. Monitoring allows for the early detection of environmental impacts and allows for timeous intervention or remedial action to be implemented accordingly, in the interest of continuous improvement of environmental performance.

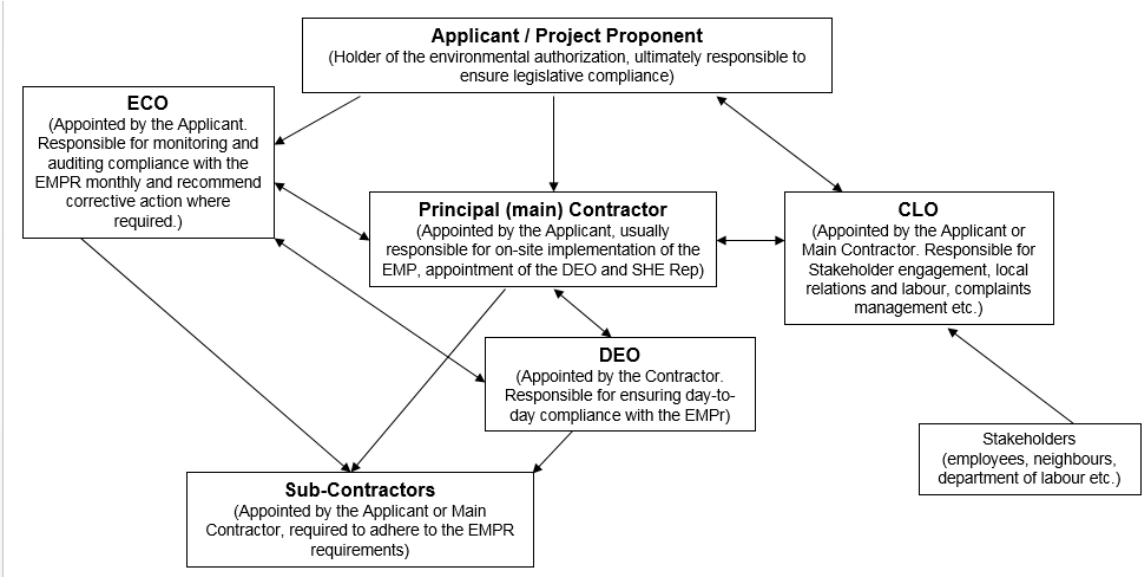
Compliance monitoring should incorporate regular audits to ensure that procedures are appropriate and that environmental objectives and targets are being achieved. Regular environmental audits will assist in identifying existing and/or potential problems affecting the environment, and can assist to determine what actions are required to comply with legal and internal requirements.

It is recommended that an on-site designated environmental officer (DEO) be appointed by the contractor, to monitor compliance to the EMPr and environmental best practice on the site for the duration of the decommissioning phase. An on-site checklist that could be used for this purpose is provided in Appendix B. The DEO will also be responsible for ensuring environmental awareness training is conducted and environmental records (training, waste disposal etc.) are kept.

It is further recommended that an independent Environmental Control Officer (ECO) be appointed by the developer prior to any activities commencing on site. During the decommissioning phase, the ECO should conduct monthly site inspections and measure compliance of the decommissioning activities against the measures stipulated in this EMPr. Table 3 and Table 4 have been compiled to be used as an on-site checklist for this purpose during the pre-decommissioning (planning) and decommissioning phase.

6.1 Roles and Responsibilities

The implementation of this EMPr is ultimately the responsibility of the Applicant, as granting of the environmental authorization will make the measures stipulated in the authorization, BAR and EMPr legally binding on the holder of the authorization. The following parties are involved in ensuring sound environmental management takes place during the decommissioning phase:



6.2 Compliance Reporting

Regulation 34 of GN 982 stipulates the requirements for auditing of compliance with an environmental authorization and environmental management programme. In summary:

- The holder of an environmental authorization must, for as long as the authorization is valid, ensure compliance with the conditions of the authorization and the EMPr, and that such compliance is audited, and that an environmental audit report is submitted to the relevant competent authority.
- The contents of the environmental audit report are stipulated in the regulations. The audit report must be compiled by a suitably qualified, experienced and independent person.
- The frequency of audits should be stipulated in the environmental authorization.

The EMPr should be updated upon receipt of the Environmental Authorization to ensure that all conditions are included in the EMPr. In addition, a Record of Environmental Incidents (spills, impacts, legal transgressions, etc.) must be maintained throughout the decommissioning phase of the proposed development along with records of corrective and preventative actions that were taken. A Complaints Register must also be maintained throughout the decommissioning phase of the proposed development in which all complaints received and actions taken are recorded.

7 ENVIRONMENTAL AWARENESS PLAN

An environmental awareness plan should be implemented throughout the decommissioning phase of the development. The plan should stipulate the manner in which the applicant intends to inform employees of any environmental risk which may result from their work, and how such risks must be dealt with in order to avoid pollution or degradation of the environment.

During the decommissioning phase, environmental awareness training will be presented to all employees on the site. The training will be given prior to any on-site activities commencing and refresher training will be provided as required. The training will include a legislative component, emphasizing the need to comply with the conditions of the EMPr and environmental authorization, and the consequences of non-compliance. Training records will also be kept by the developer / principal contractor. The ECO can assist in presenting this training. An example of typical topics that will be covered in the training is presented in Appendix C.

As a minimum, the training will include the following:

- The importance of conforming to the requirements of the EMPr and the consequences of non-conformance to the EMPr or reasonable instructions given by the Designated Environmental Offices (DEO) or Environmental Control Officer (ECO).
- The potential or actual consequences (impacts) the activities on site.
- Benefits of improved environmental performance.
- Mitigation measures to be implemented on site.

8 CONCLUSION

This EMPr presents management and mitigation measures which should be implemented throughout the decommissioning phase of the project. Implementation of these measures should be monitored and adapted if required in the interest of continuous improvement of environmental performance. These measures aim to prevent environmental impacts from occurring, or where impacts cannot be avoided, to reduce the significance of these impacts by reducing their duration, extent and/or intensity. Successful implementation of these measures should lessen the impact significance to acceptable low levels.

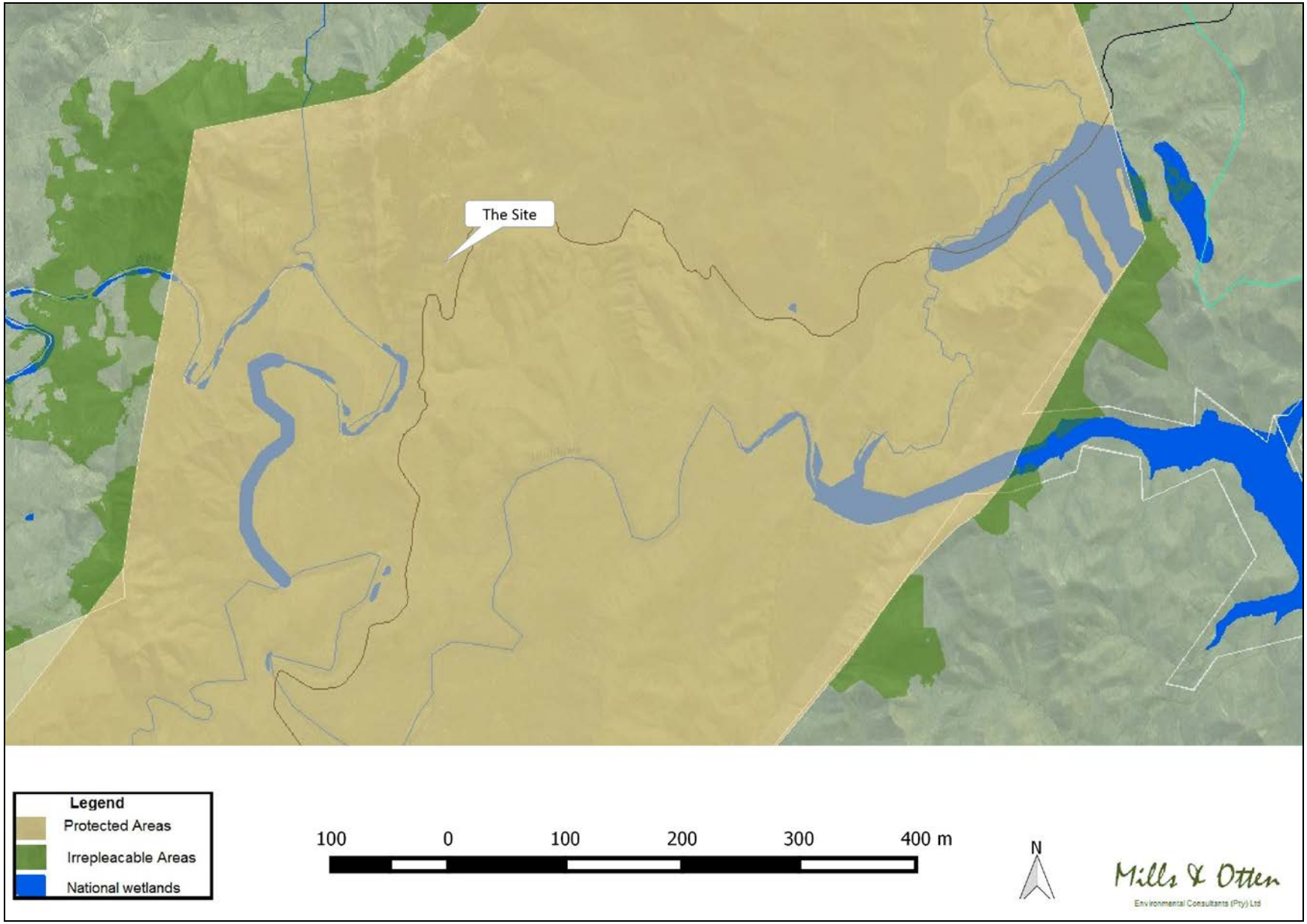


Figure 1: Sensitivity Map

9 DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME: PRE-DECOMMISSIONING AND PLANNING PHASE

Table 3: EMPr: Pre decommissioning / Planning Phase

Impacts / Issues		Action	Responsible Party	Frequency
PRE-DECOMMISSIONING (PLANNING) PHASE:				
1. General	1.1	The responsible authority (KZNEDTEA) as well as Ezemvelo KZN Wildlife must be notified of the intent to commence with decommissioning two weeks prior to site establishment and decommissioning activities commencing on site.	Project Proponent	Once-off, two weeks prior to commencement
	1.2	The EMPr should be made binding on all contractors working on site, and should thus form part of contract data so that potential contractors can take the provisions of the EMPr into account when providing quotes. All contracts with contractors must contain a clause to the effect that all waste must be disposed of at an officially approved landfill site at the contractor's cost.	Project Proponent	Once-off prior to appointment of contractors
	1.3	A copy of the EMPr must be distributed to each contractor and sub-contractor as well as the site operator. This EMPr does not absolve the contractor from complying with any other relevant legislation.	Project Proponent	Once-off
	1.4	All activities are to be in line with the OH&S Act and other relevant regulations.	Project Proponent	Continuous
	1.5	The project proponent must appoint an independent ECO prior to site establishment commencing. The ECO should be appointed for the duration of the decommissioning phase to conduct monthly site inspections and monitor compliance with the EMPr and EA.	Project Proponent	Monthly for the duration of decommissioning
	1.6	The principal contractor must appoint a designated environmental officer (DEO) who will conduct weekly inspections of environmental aspects on the decommissioning site, be responsible for record-keeping, environmental training and other tasks associated with responsible environmental management of the decommissioning activities. A sample checklist is provided in Appendix B.	Contractor	Once-off appointment for the duration of decommissioning.
	1.7	The contractor(s) must compile, implement and maintain an emergency preparedness response plan and review it after each emergency incident, or annually, whichever is more frequent.	Contractors	Once-off compilation, ongoing implementation

Impacts / Issues	Action		Responsible Party	Frequency
	1.8	The contractor must ensure that the contact details of relevant emergency services are available at the decommissioning site (include police, ambulance, fire department at least).	Contractor	Continuous
	1.9	The project site must be fenced off prior to the commencement of decommissioning activities and appropriate signage must be displayed (e.g. prohibiting entry of unauthorized persons onto site).	Contractors	Once-off
	1.10	Only one contractor's camp will be established. Prior to establishment of the site camp, the Contractor or DEO shall produce a plan showing the positions of all buildings, yards and other infrastructure on site. This plan will be subject to approval by the ECO and must be within the development footprint.	Contractor / ECO	Once-off prior to decommissioning
	1.11	All contractors are to provide method statements for review and approval by the ECO prior to commencement of decommissioning activities.	Contractor / ECO	Once-off prior to decommissioning
2. Record Keeping	2.1	All records related to monitoring & auditing must be kept on site and made available to all relevant authorities on request. Record keeping incorporates all activities on site, problems identified, transgressions noted and corrective actions taken.	Project Proponent, Contractor & ECO	Continuous
3. Stormwater Management	3.1	Stormwater management on site during the decommissioning of the installation must be implemented to prevent any run-off water from entering the tank excavation.	Project Proponent, Contractor	continuous during decommissioning

10 DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME: DECOMMISSIONING PHASE

Table 4: EMPr: Decommissioning Phase

Impacts / Issues		Action	Responsible Party	Frequency of Action
DECOMMISSIONING PHASE				
1. General	1.1	A copy of the EMPr and EA should be available at the decommissioning site throughout the decommissioning phase.	Contractor	Continuous
	1.2	The contact details of the local emergency services (Police, Hospital / EMT and Fire Department) will be available on site and employees should know whom to contact in the event of an emergency.	Contractor	Continuous
	1.3	The project site must be fenced at the earliest stages of site establishment and appropriate signage must be displayed. Strict access control to the site must be maintained throughout the decommissioning phase.	Contractor	Once off and continuous maintenance
	1.4	On completion of decommissioning, the Contractor shall remove from the site all decommissioning materials. Once this is cleared the area must be graded and scarified before topsoil placement and vegetating of relevant areas (if the area is to be revegetated).	Contractor	Once-off on completion of decommissioning
2. Topsoil Management	2.1	Topsoil should be stripped (where present) from the site prior to development commencing and stockpiled separately. Stockpiles should be protected from erosion and contamination (including establishment of alien invasive plant species). Stockpiled topsoil should be used in rehabilitation and landscaping areas as soon as possible. Stockpiles should not be higher than 2.5m and the slopes of soil stockpiles must not be steeper than 1:1.5.	Contractor	Once-off prior to development. Maintenance & protection continuous.
3. Development footprint	3.1	The development footprint should be demarcated at the earliest stages of the decommissioning phase and movement of personnel and vehicles beyond the demarcated footprint should not be allowed. Decommissioning personnel should not be allowed to access natural areas surrounding the decommissioning site.	Contractor	Once-off site demarcation, continuous maintenance
4. Stormwater management	4.1	Stormwater on the site must be managed to avoid any contamination of run-off.	Contractor	Continuous
	4.2	No stockpiles or decommissioning materials may be stored or placed within any drainage lines on site.	Contractor	Continuous

Impacts / Issues	Action		Responsible Party	Frequency of Action
	4.3	The site should regularly be inspected for signs of erosion, problem areas addressed and measures implemented to prevent erosion from occurring.	Contractor	Weekly
	4.4	All trenches and excavation works must be demarcated while open and properly backfilled and compacted as soon as possible. Trenches and excavation works must occur sequentially so as to ensure that excavations are not left open and idle for extended time periods.	Contractor	Continuous
	4.5	Equipment and machinery must be kept in a demarcated area. The loss of oils and fuel onto the ground must be prevented, and accidental spillages must be contained. Where oils have leaked into the soil, this soil must be removed and appropriately stored for disposal at an approved landfill site.	Contractor	As required
5. Sanitation	5.1	An adequate number of portable / chemical toilets must be provided for labourers (ratio of 1:30). Toilets shall be supplied with toilet paper, hand sanitizer (or hand washing facilities) and shall be cleaned and serviced regularly by a professional service provider. No use of open veld or surrounding open areas for ablution purposes will be allowed.	Contractor / Service Provider	Daily / As required
	5.2	Toilets shall be secured to prevent them from toppling. Discharge of waste from toilets into the environment and burial of waste is strictly prohibited.	Contractor / Service Provider	Continuous
	5.3	No spillage shall occur when the toilets are cleaned or emptied and the contents shall be properly stored and transported to a nearby sewage treatment works by the service provider.	Contractor / Service Provider	Ongoing
	5.4	All ablution facilities are to be inspected on a regular basis to ensure the above requirements are being met.	Contractor, DEO, ECO	Daily, Monthly
	5.5	Sufficient potable water must be available to workers at all times.	Contractor	Daily
6. Designated Eating Area	6.1	A designated eating area must be established for employees. The eating area must provide seating and be shaded.	Contractor	Continuous

Impacts / Issues	Action		Responsible Party	Frequency of Action
	6.2	No cooking shall be permitted on site. It is recommended that employees bring their lunch with them to site daily.	Contractor	Continuous
	6.3	The designated eating area shall receive daily maintenance and cleaning. All rubbish bins are to be emptied as necessary (when full) to the central waste storage area.	Contractor	Daily
	6.4	Rubbish bins are to be covered to prevent dispersal of litter by wind.	Contractor	Continuous
	6.5	No accommodation will be provided for workers on site, and no employees will be allowed to sleep over on the site. The only personnel who will be on site 24/7 will be security personnel.	Contractor	Continuous
	6.6	Smoking will only be allowed in designated area(s) which will not be in close proximity to storage areas. Receptacles for cigarette butts will be provided, no cigarettes may be disposed of onto the ground.	Contractor	Continuous
7. Noise and air quality	7.1	Noise levels shall be kept within acceptable limits. Any complaints must be noted and registered and follow-up action documented in the site's Complaints Register.	Contractor	Ongoing
	7.2	Decommissioning will only take place from 07:00 – 17:00 Mondays to Fridays and 08:00 – 15:00 on Saturdays. No decommissioning activities shall take place on Sundays or public holidays.	Contractor	Continuous
	7.3	Decommissioning vehicles and equipment must be maintained in good working order so as not to create unnecessary noise or emissions.	Contractor	Continuous
	7.4	The Contractor shall provide suitable hearing protection to all their staff and others entering areas with high noise levels.	Contractor	Daily
	7.5	The Contractor shall provide suitable dust masks to all their staff and others entering areas with significant dust.	Contractor	Daily
	7.6	No burning of waste or cleared vegetation is allowed. No fires will be allowed anywhere on the site or the surrounding veld.	Contractor	Ongoing
	7.7	Dust generated during site clearance and the decommissioning phase should be mitigated through dust control measures. Should water spraying be chosen, ensure that water quantity used is	Contractor	As required

Impacts / Issues	Action		Responsible Party	Frequency of Action
		minimal so as to avoid wastage of water.		
	7.8	Measures must be implemented to ensure that materials being transported cannot be dispersed by wind.	Contractor	Daily
8. Health & Safety	8.1	Health, Safety and Environmental Awareness induction is to be presented to all levels of staff at the commencement of decommissioning. All staff should receive the training and an attendance register must be signed by each person on site.	Developer / Contractor	Once-off and *ad hoc* for new staff.
	8.2	Site and workers are to be managed in strict accordance with the OH&S Act, the National Building Regulations and the applicable SANS standards.	Contractor	Continuous
	8.3	Ensure that vehicles and equipment are operated by trained, licensed (where applicable) and competent staff.	Contractor	Continuous
	8.4	Personal protective equipment (PPE) must be provided to and used by all staff at all times.	Contractor	Continuous
	8.5	Appropriate training regarding the handling of equipment and materials, as well as emergency response procedures, must be undertaken.	Contractor	Continuous
9. Traffic Control	9.1	Arrange for the erection of signage informing the public of intended activities, obstructions or detours should this be required. The decommissioning area must be cordoned off from the surrounding area to prevent pedestrian or vehicle access to the site (other than authorized workers and vehicles).	Contractor	Continuous
	9.2	Use existing roads to access the site and ensure that vehicles use only established and approved routes and access points to the site.	Contractor	Continuous
	9.3	Vehicle movement beyond the property boundaries must be limited during peak hours. Strict speed limits will be enforced.	Contractors	Ongoing
	9.4	Vehicles shall not be overloaded or used in a manner or for a task for which they are not suited or designed. Drivers shall be appropriately trained and licensed.	Contractors	Continuous

Impacts / Issues	Action		Responsible Party	Frequency of Action
	9.5	Plant and materials shall be appropriately secured to ensure safe passage between destinations. Loads that pose a risk of dust generation or spillage during transit (e.g. sand, refuse, cement, etc.) shall have appropriate cover. The Contractor shall be held responsible for any clean-up resulting from the failure by his employees or suppliers to secure transported plant and materials properly.	Contractor	Ongoing, as required
10. Biodiversity	10.1	Environmental awareness training will be presented to all employees at the site. Contractor to liaise with Ezemvelo KZN Wildlife to ensure that environmental training is adequate.	Contractor	Once off and as needed for new staff
	10.2	No vegetation disturbance and removal is to be allowed.	Contractor	Ongoing
	10.3	No faunal species are to be removed, killed, maimed or injured during decommissioning	Contractor	Ongoing
	10.4	A penalty system should be implemented for any removal or damage of fauna and flora.	Contractor	Ongoing
11. Waste Management	11.1	Burning or burying of waste on-site or in the surroundings is not allowed.	Contractor	Continuous
	11.2	Waste generated at the site shall be collected and placed in suitable containers on a daily basis. Containers will be fitted with lids to prevent dispersion of litter by wind. Sufficient bins must be placed around the site for the collection and temporary storage of general waste, and any hazardous waste respectively. Waste containers must be labelled as “general waste” and “hazardous waste”.	Contractor	Daily
	11.3	Ensure that builders’ rubble is removed from the decommissioning site regularly and disposed of at an approved site.	Contractor	Weekly
	11.4	General waste must be removed from the site for disposal at a registered landfill on a weekly basis or as required.	Contractor	Weekly
	11.5	Hazardous waste must not be stored on site for longer than 90 days. Safe Disposal certificates should be kept on site.	Contractor	Ongoing

Impacts / Issues	Action		Responsible Party	Frequency of Action
	11.6	Any material which can be recycled must be taken to a licensed recycler, if feasible. Waste manifests and quantities recycled must be kept on site.	Contractor	Continuous
12. Handling and Storage of Hazardous Materials	12.1	Fuel and other hazardous materials, such as oils, lubricants, etc. should be stored in designated impermeable, lined, bunded and secured area(s) to prevent any spillage onto soil. Access to and use of such materials should be controlled. Such substances may not stand around on site without appropriate spill prevention being implemented.	Contractors	Continuous
	12.2	Sufficient care must be taken when handling hazardous materials such as fuel, oil, cement, bitumen, etc. to prevent pollution. Only trained and authorized personnel will be allowed to handle hazardous materials.	Contractors	Continuous
	12.3	All hazardous materials on site shall be associated with an MSDS.	Contractors	Continuous
	12.4	Hazardous material containers shall be disposed of as hazardous waste when empty and not be used for any other purpose.		
	12.5	In the event of a spill, the relevant emergency response procedure shall be implemented immediately.	Contractors	Continuous
13. Spill prevention and management	13.1	The hazardous material storage area shall be equipped with the appropriate warning signage, no smoking and no naked flame signs and will be equipped with the necessary firefighting equipment.	Contractor	Continuous
	13.2	All site employees shall be trained in the emergency procedure(s) to be followed in the event of spills or leaks occurring.	Contractor	Ongoing
	13.3	Spill kits (of appropriate size and substance) should be available on site at all times. Staff should be trained in using the spill kits.	Contractor	Continuous
	13.4	No vehicles or machinery may be serviced on site during normal conditions. All routine servicing of vehicles and machinery to be undertaken at a designated workshop off-site. In the event of a breakdown, immediate steps shall be taken to prevent any spillage. Minimal *emergency* servicing may be undertaken on the site, and appropriate drip trays must then be used in such emergency cases.	Contractor	Continuous

Impacts / Issues	Action		Responsible Party	Frequency of Action
	13.5	All fuelling of vehicles must be undertaken on an impermeable liner / drip tray. After re-fuelling drip trays shall be appropriately cleaned (spilled fuel/diesel etc. may not remain in the drip tray on site).	Contractor	Continuous
	13.6	All equipment to be inspected daily by the operator to ensure fitness, all defects to be reported and repaired immediately. Leaking equipment shall be repaired immediately or removed from Site.	Contractor	Daily
	13.7	Should any leaks occur from the machinery or vehicles on site, any contaminated soil should be removed and appropriately disposed of as hazardous waste.	Contractor	As and when required
	13.8	Oil from drip trays, used oil and any other source of hydrocarbon waste shall be removed on a regular basis to an oil-recycling centre.	Contractor	Ongoing
14. Cement Batching	14.1	Cement mixing, if required, should be done in one designated area only on an impermeable surface or mixing trays. Concrete may not be mixed on the open ground. Drainage from batching areas should be contained. No waste water shall be discharged directly into the environment.	Contractor	Continuous
	14.2	Cleaning of concrete mixing tools and equipment must be done using appropriate cleaning trays. Cement trucks and cement mixers shall not discharge any concrete wash directly onto the ground.	Contractor	As required
	14.3	Empty cement bags shall be stored in weatherproof containers to prevent windblown dust and water contamination. Empty bags shall be disposed of regularly and not be used for any other purpose.	Contractor	Ongoing
	14.4	The Contractor shall take all reasonable measures to prevent the spillage of cement / concrete during batching and decommissioning operations. During pouring, the soil surface shall be protected using plastic and all visible remains of concrete shall be physically removed on completion of the concrete pour and appropriately disposed of.	Contractor	Ongoing
15. Fire-prevention and fire-fighting	15.1	Firefighting equipment should be available on site. Fire extinguishers should be serviced as required by the relevant legislation.	Contractor	Continuous

Impacts / Issues	Action		Responsible Party	Frequency of Action
	15.2	Training should be provided to the workers in the use of the appropriate fire-fighting equipment and records kept of such training.	Contractor	Ongoing
16. Heritage Resources	16.1	Environmental awareness training should be presented to all employees at the site that will include the identification of potential heritage resources, and how to react if the presence of heritage resources is suspected: If any potential heritage resource is uncovered during decommissioning, all work in the vicinity should be halted immediately and a heritage resource practitioner consulted.	Contractor	Once-off training, ad-hoc training for new employees, implementation as required.
17. Visual Impacts and Housekeeping	17.1	Ensure that good housekeeping is implemented throughout the site. The decommissioning site is to be fenced off, and can be screened with shade netting in areas such as storage areas. Rehabilitation of the site (making neat, implementing landscaping) as soon as possible will also mitigate visual impacts of decommissioning.	Contractor	Continuous

APPENDIX A: CV OF THE EAP

CURRICULUM VITAE

NAME : KIRSTIN MARY OTTEN (Pr.Sci.Nat.)

EDUCATION : University of the Witwatersrand

QUALIFICATIONS : 1981 B.Sc. (Chemistry, Biochemistry, Genetics)

MEMBERSHIP : Institute of Waste Management, Member IAIAsa, EWT

REGISTRATION : Professional Environmental Scientist (Pr.Sci.Nat.) 400088/97

LANGUAGES : English and Afrikaans.

CAREER : 1982 - 1983 Research Scientist at Central Laboratory, South African Breweries. 1983 - 1987 Employed in various positions by Waste-tech (Pty) Ltd. Positions held included Laboratory Manager, Hazardous Waste Officer and Environmental Protection Manager, with EIA and auditing responsibilities as well as government liaison for permitting purposes. 1987 - 1992 Freelance environmental consultant.
1992 - Present. Director, Mills & Otten Environmental Consultants (Pty) Ltd.

EXPERIENCE

Waste Management: Responsible for the operation of hazardous waste facilities including laboratory; identification of new disposal sites; development of environmental auditing systems and personnel training. Consulting work done on numerous projects such as the identification, investigation, design, commissioning, operation, closure and permitting of landfill sites as well as strategy development for metropolitan areas and Town Councils. Waste minimisation strategies developed for industrial clients.

Impact Assessments: Numerous environmental impact assessments have been undertaken for different development proposals. Impact matrices are developed for each individual project and detailed public participation is undertaken.

Environmental Auditing: Ongoing auditing of waste disposal sites as well as industrial installations. EMP auditing and monitoring is undertaken for EIA projects. Developed a specific audit procedure for petrochemical depots and service stations which include determination of relative risk to the environment. This had been extended to include due diligence audits and environmental management systems in accordance with ISO 14001. Training of personnel in environmental aspects of work procedures has been ongoing. Audits are conducted in terms of current legislation across all disciplines of relevant Acts and Regulations.

Contamination Assessments: Monitoring of contamination of surface and groundwater as well as soils. Extensive investigation of the nature and significance of contamination and determination of suitable remediation methodology, such as bioremediation or chemical treatment.

Research: Assessment of different analytical techniques, specifically for petroleum contamination, in association with local and international laboratories. Investigation into the specific chemistry of petroleum products in water and the environmental consequences thereof.

Licensing: Air Emission license and Water Use license applications on behalf of various clients for existing and proposed facilities.

APPENDIX B: WEEKLY ENVIRONMENTAL CHECKLIST (EXAMPLE)

DECOMMISSIONING PHASE WEEKLY ENVIRONMENTAL CHECKLIST

Date _____

Time _____

Checked By (Name) _____

Checked By (Signature) _____

INSTRUCTIONS

- This checklist is to be completed on a weekly basis whilst decommissioning activities are occurring on site.
- These checklists should be kept on file and provided to the ECO monthly during site visits.
- Photographic evidence of observations, as well as any remedial action undertaken must also be kept.
- The requirements listed in the Table below must be rated on a weekly basis as one of the following:

Yes	If the requirement is being met in full and the site is compliant
No	If the requirement is not being met and the site is thus not complying with this requirement
Partial	If the requirement is not met in full, but concerted effort has been made to meet the requirement and no environmental impacts are occurring from the current situation. Please include an explanation in the "comments" column (if there is insufficient space you may attach a separate page to this checklist).
Not Applicable (N/A)	If the requirement is not applicable to the current phase of the decommissioning activities. Please include an explanation in the "comments" column (if there is insufficient space you may attach a separate page to this checklist).

No	Requirement	Yes	No	Partial	N/A
1	Is there a copy of the environmental authorization and EMP available at the site?				
2	Are the contact details of the emergency services displayed at the site?				
3	Are fire-fighting facilities present on site and have these been serviced?				
4	Is security and access control at the site adequate?				
5	Do all workers have access to the required PPE and is the use of PPE enforced?				
6	Are all materials, vehicles and machinery stored in secure and appropriate areas?				
7	Is there any evidence of fires being made on site?				
8	Are there adequate chemical toilets on site and being used?				
9	Is there sufficient potable water for drinking and ablution purposes on site?				
10	Are there any dangerous or toxic substances being stored on site?				
11	If any dangerous or toxic substances are being stored on site are MSDS available?				
12	Has any vehicles maintenance occurred on site today?				
13	Is there any evidence anywhere on the site of hydrocarbon spills?				
14	Is there any evidence of cement mixing, outside of the designated area?				
15	Are the stockpiles and spoil heaps protected from erosion? Is there any erosion on the site?				
16	Have the access points to the site been cleaned of dust and mud?				
17	Has any construction occurred outside of the allowed working hours?				
18	Have any complaints regarding the construction activities been received?				
19	Are there adequate waste bins on site (for general and hazardous waste respectively)?				
20	Has any waste been removed from the site?				
21	Has any hazardous waste been removed? (Chain of custody, safe disposal certificates?				
22	Is there litter on the site?				
23	Is contaminated storm water discharging to sewer, stormwater or surrounding environment?				
24	Are there adequate warning signs displayed to manage traffic?				
25	Has the weekly inspection been undertaken and has the checklist been filed?				
26	Any other observations:				

APPENDIX C: ENVIRONMENTAL AWARENESS TRAINING POSTER FOR THE DECOMMISSIONING PHASE (EXAMPLE)

You are not allowed to access private property or natural areas surrounding the site. Stay in designated areas.

Construction sites are dangerous. If you see someone you don't know, direct them to the site office and report it to your supervisor.

You may only eat and smoke in designated areas. Throw your rubbish (including cigarette butts) in the bins provided. If the bin is full, report it to your supervisor.

Use the toilets provided! Urinating outside of the toilets causes pollution and will not be tolerated. If the toilet(s) need emptying / toilet paper, report it to your supervisor.

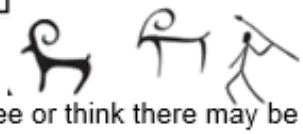
Cement mixing may only be done in designated areas.

Stick to the speed limit. Report any faulty / leaking vehicles and equipment.

No Fires may be made on site. Make sure you know where the fire extinguishers are

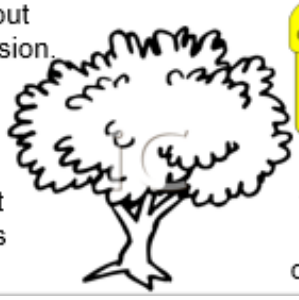
Hazardous materials include petrol, oil, diesel, cleaning agents, hydraulic fluids, paint, cement etc. Keep these in designated areas. Use drip trays and empty drip trays after use (as hazardous waste). Report any spills or leaks to your supervisor immediately. Do not use empty containers for any other purpose.

Always wear the relevant PPE



If you see or think there may be heritage resources (graves, old kraals, spearheads, potshards), stop all work and inform your supervisor

Do not cut down any trees or remove any plants without permission.



Animals (even those we don't like) are important to the environment. Do not harm/kill/trap them. Report sightings to your supervisor so that trained people can remove animals from site

Separate and recycle waste. Hazardous waste must not be mixed with other waste and vice versa

Appendix F – Public Participation Information

Appendix F1 – Communication to and from I&APs

Appendix F2 – Site Notice

Appendix F3 – Newspaper Advertisement

Appendix F4 – List of I&APs

Appendix F1 – Communication to and from I&APs

Mills & Otten (Pty) Ltd

Environmental Consultants
2016/388381/07
VAT Number 4770177352

Johannesburg Office
PO Box 84344
Greenside 2034

Tel. 011 486 0062
Fax. 086 554 6573

e-mail: info@millsandotten.co.za

Cape Town Office
PO Box 2286
Clareinch 7740

Tel and Fax. 021 671 7107

M&O Ref.: MO3907/20170626/IAP

14 July 2017

Attention: Andy Blackmore
Ezemvelo KZN Wildlife
E-mail: andyb@kznwildlife.com

Dear Sir/Madam

NOTIFICATION OF BASIC ASSESSMENT PROCESS FOR THE PROPOSED REMOVAL OF FUEL TANKS FROM THE CONSERVATION AREA (FIELD STAFF), HLUHLUWE GAME RESERVE, KWAZULU-NATAL PROVINCE.

This letter serves to inform you that in terms of the National Environmental Management Act (No. 107 of 1998), Total South Africa (Pty) Ltd intends to undertake an activity listed under the Environmental Impact Assessment Regulations 2014 (made under Section 24 of the National Environmental Management Act, 107 of 1998 and amendments) on the abovementioned site. The proposed activity is listed under Regulation GN983 (as amended by GN327), Listing Notice 1:

Activity 31: "*The decommissioning of existing facilities, structure or infrastructure for –*

(i) Any development and related operation activity or activities listed in this notice, listing notice 2 or listing notice 3 of 2014.

(ii) Any expansion and related operation activity or activities listed in this notice, or listing notice 2 or listing notice 3 of 2014.

(iii) Any phased activity or activities for development and related operation activity or expansion and related operation activities listed in this notice or listing notice 3 of 2014; or

(iv) Any activity regardless the time the activity was commenced with, where such activity:

a. Is similarly listed to an activity in (i) or (ii) above; and

b. Is still in operation or development is still in progress;

Excluding where –

(aa) activity 22 of this notice applies, or

(bb) the decommissioning is covered by part 8 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) in which case the National Environmental Management Waste Act applies."

The proposed development involves the removal of fuel storage tanks at the above mentioned site. Prior to undertaking activities listed in GNR 983 of 2014 (as amended), environmental authorisation must be obtained from the relevant provincial environmental authority (KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs, KZN EDTEA). The application process to be followed is the Basic Assessment Process.

Mills & Otten Environmental Consultants has been appointed as the Environmental Assessment Practitioner (EAP) for the application.

In order to be identified as an Interested and/or Affected Party, and if you wish to receive a copy of the Draft Basic Assessment Report (BAR), please submit your name, interest in the project and contact information to the consultants above, within 30 days of placement of this notice (i.e. before 14 August 2017).The Draft BAR will be available for public comment for a period of 30 days from 28 July 2017 until 28 August 2017.

Yours sincerely

KIRSTIN OTTEN (Pr.Sci.Nat)

Mills & Otten (Pty) Ltd

Environmental Consultants
2016/388381/07
VAT Number 4770177352

Johannesburg Office
PO Box 84344
Greenside 2034

Tel. 011 486 0062
Fax. 086 554 6573

e-mail: info@millsandotten.co.za

Cape Town Office
PO Box 2286
Clareinch 7740

Tel and Fax. 021 671 7107

M&O Ref.: MO3907/20170626/IAP

14 July 2017

Attention: Ashley Starkey
Department of Water and Sanitation
E-mail: StarkeyA@dws.gov.za

Dear Sir/Madam

NOTIFICATION OF BASIC ASSESSMENT PROCESS FOR THE PROPOSED REMOVAL OF FUEL TANKS FROM THE CONSERVATION AREA (FIELD STAFF), HLUHLUWE GAME RESERVE, KWAZULU-NATAL PROVINCE.

This letter serves to inform you that in terms of the National Environmental Management Act (No. 107 of 1998), Total South Africa (Pty) Ltd intends to undertake an activity listed under the Environmental Impact Assessment Regulations 2014 (made under Section 24 of the National Environmental Management Act, 107 of 1998 and amendments) on the abovementioned site. The proposed activity is listed under Regulation GN983 (as amended by GN327), Listing Notice 1:

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(iii) Any phased activity or activities for development and related operation activity or expansion and related operation activities listed in this notice or listing notice 3 of 2014; or

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The proposed development involves the removal of fuel storage tanks at the above mentioned site. Prior to undertaking activities listed in GNR 983 of 2014 (as amended), environmental authorisation must be obtained from the relevant provincial environmental authority (KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs, KZN EDTEA). The application process to be followed is the Basic Assessment Process.

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Yours sincerely

KIRSTIN OTTEN (Pr.Sci.Nat)

Mills & Otten (Pty) Ltd

Environmental Consultants
2016/388381/07
VAT Number 4770177352

Johannesburg Office
PO Box 84344
Greenside 2034

Tel. 011 486 0062
Fax. 086 554 6573

e-mail: info@millsandotten.co.za

Cape Town Office
PO Box 2286
Clareinch 7740

Tel and Fax. 021 671 7107

M&O Ref.: MO3907/20170626/IAP

14 July 2017

Attention: Annie van de Venter
Amafa / Heritage KwaZulu-Natal
E-mail: amafaddps@amafapmb.co.za

Dear Sir/Madam

NOTIFICATION OF BASIC ASSESSMENT PROCESS FOR THE PROPOSED REMOVAL OF FUEL TANKS FROM THE CONSERVATION AREA (FIELD STAFF), HLUHLUWE GAME RESERVE, KWAZULU-NATAL PROVINCE.

This letter serves to inform you that in terms of the National Environmental Management Act (No. 107 of 1998), Total South Africa (Pty) Ltd intends to undertake an activity listed under the Environmental Impact Assessment Regulations 2014 (made under Section 24 of the National Environmental Management Act, 107 of 1998 and amendments) on the abovementioned site. The proposed activity is listed under Regulation GN983 (as amended by GN327), Listing Notice 1:

Activity 31: "*The decommissioning of existing facilities, structure or infrastructure for –*

(i) Any development and related operation activity or activities listed in this notice, listing notice 2 or listing notice 3 of 2014.

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(iv) Any activity regardless the time the activity was commenced with, where such activity:

a. Is similarly listed to an activity in (i) or (ii) above; and

b. Is still in operation or development is still in progress;

Excluding where –

(aa) activity 22 of this notice applies, or

(bb) the decommissioning is covered by part 8 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) in which case the National Environmental Management Waste Act applies."

The proposed development involves the removal of fuel storage tanks at the above mentioned site. Prior to undertaking activities listed in GNR 983 of 2014 (as amended), environmental authorisation must be obtained from the relevant provincial environmental authority (KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs, KZN EDTEA). The application process to be followed is the Basic Assessment Process.

Mills & Otten Environmental Consultants has been appointed as the Environmental Assessment Practitioner (EAP) for the application.

In order to be identified as an Interested and/or Affected Party, and if you wish to receive a copy of the Draft Basic Assessment Report (BAR), please submit your name, interest in the project and contact information to the consultants above, within 30 days of placement of this notice (i.e. before 14 August 2017).The Draft BAR will be available for public comment for a period of 30 days from 28 July 2017 until 28 August 2017.

Yours sincerely

KIRSTIN OTTEN (Pr.Sci.Nat)

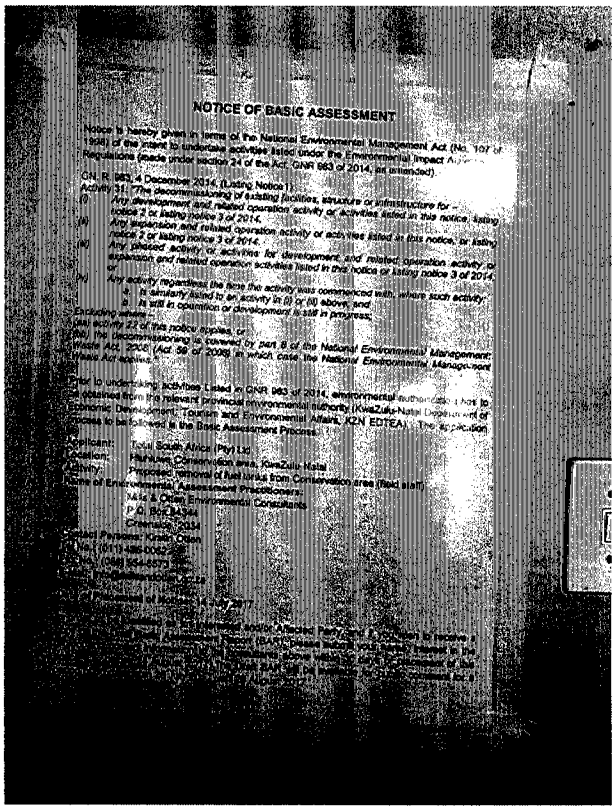
Appendix F2 – Site Notice

AFFIDAVIT

This serves to confirm that a notice advertising the Basic Assessment for the proposed removal of fuel storage tanks from the conservation area, Hluhluwe Game Reserve in KwaZulu-Natal Province was erected on site on 14 July 2017, as shown in Photographs 1 and 2 below. The site is located on The Farm Umfolozi-Hluhluwe Game Reserve No. 17439, KwaZulu-Natal Province.

Photograph 1: **Notice posted at the Memorial Gate of the Park**

Photograph 2: **Photograph posted at the Nyalazi Gate.**



Photograph 3: **close up of notice.**

I certify that before administering the oath/affirmation I asked the deponent, **Kirstin Otten,** the following questions and wrote down her answers in her presence:

Do you know and understand the contents of the declaration?
Answer: YES

Do you have any objections to taking the prescribed oath?
Answer: NO

Do you consider the prescribed oath to be binding on your conscience?
Answer: YES

I certify that the deponent has acknowledged that he/she knows and understands the contents of the declaration which was sworn to/affirmed before me on this, the ...18th..... day of July 2017 and the deponents signature was placed thereon in my presence.

Signed: Environmental Consultant:.....

Date: 18/7/2017

COMMISSIONER OF OATHS

Designation (Rank): CST

Ex-office Republic

Full Name: MANTATA CHRISTOPHER HLABE

Business Address: 71 DUNDALK AVENUE, PARKVIEW SAPS

STATION COMMANDER

18 -07- 2017

Appendix F3 – Newspaper Advertisement

NOTICE OF BASIC ASSESSMENT

Notice is hereby given in terms of the National Environmental Management Act (No. 107 of 1998) of the intent to undertake activities listed under the Environmental Impact Assessment Regulations (made under section 24 of the Act, GNR 983 of 2014, as amended).

GN. R. 983, 4 December 2014, (Listing Notice1):
Activity 31: `The decommissioning of existing facilities, structure or infrastructure for `
(i) Any development and related operation activity or activities listed in this notice, listing notice 2 or listing notice 3 of 2014.
(ii)Any expansion and related operation activity or activities listed in this notice, or listing notice 2 or listing notice 3 of 2014.
(iii)Any phased activity or activities for development and related operation activity or expansion and related operation activities listed in this notice or listing notice 3 of 2014; or
(iv)Any activity regardless the time the activity was commenced with, where such activity: a.Is similarly listed to an activity in (i) or (ii) above; and
b.Is still in operation or development is still in progress;
Excluding where `
(aa) activity 22 of this notice applies, or
(bb) the decommissioning is covered by part 8 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) in which case the National Environmental Management Waste Act applies.`

Prior to undertaking activities Listed in GNR 983 of 2014, environmental authorization has to be obtained from the relevant provincial environmental authority (KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs, KZN EDTEA). The application process to be followed is the Basic Assessment Process.

Applicant:
Total South Africa (Pty) Ltd
Location:
Hluhluwe Conservation area, KwaZulu-Natal
Activity:
Proposed removal of fuel tanks from Conservation area (field staff).
Name of Environmental Assessment Practitioners,
Mills & Otten Environmental Consultants
P.O. Box 84344 Greenside, 2034
Contact Persons: Kirstin Otten
Tel No.: (011) 486-0062
Fax No.: (086) 554- 6573
E-Mail: info@millsandotten.co.za

Date of Placement of Notice: 14 July 2017

In order to be identified as an Interested and/or Affected Party, and if you wish to receive a copy of the Draft Basic Assessment Report (BAR), please submit your name, interest in the project and contact information to the consultants above within 30 days of placement of this notice (i.e. before 14 August 2017).The Draft BAR will be available for public comment for a period of 30 days from 28 July 2017 until 28 August 2017
14-07-2017

MA016986

NOTICE TO CREDITORS IN DECEASED ESTATES

All persons having claims against the under-mentioned estate must lodge it with the Executor concerned within 30 days (or as indicated) from the date of publication hereof.
Estate No: 6655/2017
Surname: Roodt
First names: Magdalena Francina Petronella
ID No: 4005060031080
Last Address: No: 4 Bucklands Flats, Mtubatuba
Date of Death: 09 April 2016
Master`s office: Durban
Name of Executor or Authorized Agent: Christoffel Roodt
Advertiser and address: Scheepers Spies Mdaka Inc
Lot 47 Jan Smuts Avenue,
Mtubatuba 3935
Advertiser e- mail: estates@ssminc.co.za
Tel: 035 550 1207
Fax: 035 550 1209
14-07-2017

MA016989

SECTION 35(5) OF ACT 66 OF 1965 NOTICE

THE FIRST AND FINAL LIQUIDATION AND DISTRIBUTION ACCOUNT IN THE INTESTATE ESTATE OF THE LATE, BONGINKOSI MTHETHWA
(ID 6909085815088) BORN ON 1969-09-08. WHO WAS AN UNEMPLOYED WIDOWER.
RESIDED AT WARD 9, EKUPHELENI RESERVE, EMPANGENI.
WHO DIED AT NGWELEZANE ON 2015-08-25.
ESTATE NO: 001039/2016 (DBN),
NOTICE IS HEREBY GIVEN THAT THE FIRST AND FINAL LIQUIDATION AND DISTRIBUTION ACCOUNT IN THE ABOVE ESTATE WILL LIE OPEN FOR INSPECTION FOR A PERIOD OF 21 DAYS FROM DATE OF PUBLICATION HEREOF AT THE OFFICES OF THE MASTER OF THE HIGH COURT, DURBAN, AND THE MAGISTRATE`S COURT, EMPANGENI
EXECUTOR:
MNQOBI LINDOKUHLE MTHETHWA
C/O P O BOX 30287
RICHARDS BAY
3900
ADVERTISER:
MORROW & MORROW INC
P O BOX 30287 RICHARDS BAY 3900
14-07-2017

MA016977

• PUBLIC / LEGAL NOTICES •

JOZINI LOCAL MUNICIPALITY

NOTICE IN TERMS OF THE JOZINI SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2017 READ WITH SECTION 2(2) AND THE RELEVANT PROVISIONS OF THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT, 2013 (ACT 16 OF 2013)

I Peter Gilmore, being the authorised agent of registered The Farm Tarzan NO. 13727 Registration Division HV Province of KwaZulu Natal hereby give notice in terms of Item 1 of Schedule 5 of the Jozini Spatial Planning and Land Use Management By-Law, 2017 read with Section 2(2) and the relevant provisions of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013), that I have applied to the Jozini Local Municipality for proposed development of a Private Game Lodge. The property is situated within the Jozini Municipality (ward 1) and is located approximately 32km North of Hluhluwe and 16km South of Mkuze. The total area under consideration measures approximately 5 Ha and is further situated in the northern banks of the Msunduzi River within the private Zululand Rhino Game Reserve Park. Access is gained off an existing game road which in turn gains access off District Road 464. **(Co-ordinates: - 27.77340, 32.08124)**

Any person wishing to make representation, comments and or objections to the application is hereby invited to provide such representation or objections in terms of the provisions of the Jozini Spatial Planning and Land Use Management By-Law, 2017 and the provisions of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013), with specific reference to Section 45(3) of the said Act by indicating their interest and how their interest may be affected by the application hereby advertised.

Any person making representation and or objecting to the application must provide his or her contact details in order for the municipality to where applicable correspond with them with regard to their submissions. Particulars of the application will lie for inspection during normal office hours at the office of the Town Planning Section, Jozini Local Municipality, Circle Street, Jozini for a period of 30 days from the date of first publication of this notice.

Objections to or representations in respect of the application must be lodged with or made in writing to the office of the Municipal Manager, Mr. JFK Khumalo to Private Bag X028, Jozini 3969 or email: municipalmanager@jozini.gov.za before 6 August 2017. Tel: 035 752 1299 Fax: 035 572 1266.

Please note that the Jozini Municipality will refuse to accept comments submitted after the closing date for comments, the 14 August 2017 and that persons who did not comment on the application will not have a right of appeal against the decision of the municipality.

Mr. JFK KHUMALO
Municipal Manager
Jozini Local Municipality

ma016966-27-17©

NOTIFICATION OF ENVIRONMENTAL AUTHORISATION BY THE KWAZULU-NATAL DEPARTMENT OF ECONOMIC DEVELOPMENT, TOURISM AND ENVIRONMENTAL AFFAIRS IN RESPECT OF THE ZULULAND ANTHRACITE COLLIERY (PTY) LTD AT OKHUKHO RESERVE WITHIN ULUNDI LOCAL MUNICIPALITY.

DEPARTMENT OF ECONOMIC DEVELOPMENT, TOURISM AND ENVIRONMENT AFFAIRS (DEDTEA)
REFERENCE: DC26/S24G/0003/2013

Notice is given in terms of Government Notice R. 543 of the Environmental Impact Assessment (EIA) Regulations of 2010, as promulgated under the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998)(as amended), of the decision by the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) to grant Zululand Anthracite Colliery (Pty) Ltd environmental authorisation regarding unlawful commencement or continuation of listed activities in terms of GNR 544 and GNR 546, Namely: The unlawful construction of access roads wider than 4 metres, transformation of undeveloped land and the clearance of indigenous vegetation of more than 1 hectare by Zululand Anthracite Colliery (PTY) LTD at Okhukho reserve within Ulundi Local Municipality.

Copies of the Environmental Authorisation issued on 3 July 2017 are available from GCS (Pty) Ltd on request. Interested and Affected Parties (&APs) wishing to formally appeal this decision must ensure that they follow the following procedure, in accordance with Chapter 7 of the EIA Regulations as outlined below.

Appeals procedure
The appeals procedure is outlined under Chapter 7 (subsection 60 to 62) of the Environmental Impact Assessment (EIA) Regulations (Government Notice Regulation 543) published in terms of National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) in 2010 provides that if the applicant or any I&AP affected by the decision wishes to lodge an appeal with regards to the environmental authorisation granted, a notice of the intention to appeal this decision must be lodged with the relevant Department within 20 days after the date of the decision and submission within 30 days of the lapsing of the aforementioned period. An appeal may be lodged using the following contact details:

Attention: KwaZulu-Natal MEC of the Department of Economic Development, Tourism and Environment Affairs

Postal/Fax/E-mail:	**Physical:**
Post: Private Bag X001, Bishopsgate, 4008, Durban	9th Floor Marine Building 22 Dorothy Nyembe Street Durban 4001
Tel: (031) 310 5300	
Fax: (031) 310 5416	
E-mail: Harsh.Inderlall@kznedtea.gov.za (Haresh Inderlall)	

GCS kindly requests that any appeal lodged with the DEDTEA is copied to GCS using the contact details below.

GCS contact details:
Please direct any queries and/or a copy of any appeals lodged with the DEDTEA to GCS :

Reference: 15-210 Zululand Anthracite Colliery (Pty) Ltd
Attention: Ms Karin Loukes
Fax: (031) 764 7140
Email: karinl@gcs-sa.biz
Post: P.O Box 819, Gillitts, 3603

GCS Water & Environmental Consultants

ma016991-28-17©

uMHLATHUZE
VISION INTO ACTION

TENDER 8/2/1/UMH127-16/17

Tenders are hereby invited for the following tender:

TENDER 8/2/1/UMH127-16/17: MANUFACTURE, SUPPLY, DELIVER, INSTALL, TEST & COMMISSIONING OF A NEW 132/11 kV, 30 MVA OIL NATURAL AIR FORCE(ONAF), DNy1, POWER TRANSFORMER, NEW NECRT & ASSOCIATED ELECTRICAL AND CIVIL WORKS FOR CYGNUS SUBSTATION

It is estimated that tenderers should have a CIDB contractor grading designation of 6EP or Higher

Main contractors will be required to sub-contract 25% of the entire project value to local SMME contractor within City of uMhlathuze Municipality and preferably the Youth; Women and disabled people owned companies. Signed sub-contracting contract/agreement must be submitted before SLA can be signed by Council and the bidder.

"Prospective tenderers' attention are directed to the provisions of Regulation 25(7)(a) of the CIDB Regulations which allows the acceptance of a tender by a contractor with a lower contractor grading designation than that stipulated in the tender advert based on reasonable derivation."

Tender documents will be available at Contact Centre situated at the foyer of the Richards Bay Civic Centre, Ms Wendy Wilke' telephone (035) 907 5997 from 13 July 2017 at 12h00.

Please note that in order to obtain a Tender Document a non-refundable deposit of R571.00 (including VAT) (subject to change as per Council's tariff of charges), is payable in advance at the following venue:

Rates Hall-Civic Centre Richards Bay

Payment may also be made directly into Council's bank account:
ABSA Richards Bay, Account Number 2150000095.
Reference: TENDER NO., Name of Company:……"

No documents will be handed out unless the tenderer or his/her representative produces a receipt for the deposit. Cheques will be made in favour of uMhlathuze Municipality. It should be noted that the Rates Hall closes at 15:00 on weekdays for receipt of payments. Only Bank guaranteed cheques or cash will be accepted as payment method.

Should use be made of a Courier Company to collect tender documents on behalf of your company, proof of payment and arrangement for the collection of the tender documents must be faxed to Fax (035) 9075381/5444 for attention: Mr I Makae or Email Ignatius.Makae@umhlathuze.gov.za

A representative of the uMhlathuze Municipality will meet prospective tenderers for a **compulsory** site briefing on **Thursday, 20 July 2017 at 09:00 in the Boardroom, Electricity Supply Services, 65 Alumina Allee (cnr of Alumina Allee & Duralimin Duct) Alton, Richards Bay.** A person who is directly employed by the Tenderer and is suitably qualified and experienced to comprehend the implications of the work involved must represent the Tenderer at the Site Briefing meeting.

Failure to attend the compulsory site briefing will render the tender invalid.

Enquiries can be directed to Mr Daniel Mohapi tel. no. 035-9075951, MohapiMD@umhlathuze.gov.za or Mr Lovemore Mutikane tel. no. 035-9075490, MutikaniL@umhlathuze.gov.za

This request for Tenders is subject to the terms and conditions Council's Preferential Procurement Policy and will be evaluated in terms of the 80:20 method.

It is solely the responsibility of vendors, who want to make use of the preferences available under this policy to familiarise themselves with its contents, and to comply with its conditions, to be able to make a claim for preference.

NB !! VALID BBBEE CERTIFICATES TO BE SUBMITTED WITH THE TENDER IF YOU WISH TO CLAIM PREFERENCES IN TERMS OF THE ABOVEMENTIONED REGULATIONSI

Copies of Council's Preferential Procurement Policy may be obtained from the Department of the Infrastructure & Technical Services: Electricity Supply Services (prior arrangement should be made with **Mr I Makae**).

OR

May be downloaded from Council's Web Site www.umhlathuze.gov.za

NB: Regulation 44 of the Supply Chain Management Regulations states that the Municipality may not make any award to a person who is in the service of the state, and if that person is not a natural person, of which any Director, Manager, Principal, Shareholder or Stakeholder is a person in the service of the State; or who is an advisor or consultant contracted with the Municipality or Municipal entity.

Council will not accept responsibility for the late delivery of Tenders by courier services or any other means that are not placed in the tender box on or before the date and time of the closing of the tender. The uMhlathuze Municipality does not bind itself to accept the lowest or any tender, and reserves the right to accept any tender in whole or in part.

Sealed tenders, clearly endorsed: **"TENDER 8/2/1/UMH127-16/17 : MANUFACTURE, SUPPLY, DELIVER, INSTALL, TEST & COMMISSIONING OF A NEW 132/11 kV, 30 MVA OIL NATURAL AIR FORCE(ONAF), DNy1, POWER TRANSFORMER, NEW NECRT & ASSOCIATED ELECTRICAL AND CIVIL WORKS FOR CYGNUS SUBSTATION**
" must be placed in the Tender box at the foyer of the Civic Centre, 5 Mark Strasse, Richards Bay before **12:00 noon on Friday, 28 July 2017.**

NB!! The Tenderers details and return address must be indicated on the back of the sealed envelope in which the Tender is deposited, this is required for the purposes of returning tenders in cases where it may be required.

Tenderers who have not been contacted within 120 days after the closing date of this tender must accept that their tender was unsuccessful.

Civic Offices
Private Bag X1004
RICHARDS BAY
3900
MN38/2017
DMS1193398

DR N J SIBEKO
MUNICIPAL MANAGER

ma016994-28-17©

Appendix F4 – List of I&APs

REGISTER OF INTERESTED AND AFFECTED PARTIES

Basic Assessment process for the proposed removal of fuel tanks from the Conservation area (field staff), Hluhluwe Game Reserve, KwaZulu-Natal Province

NAME	ASSOCIATION	CONTACT DETAILS	PHYSICAL / POSTAL ADDRESS
Mr Andy Blackmore	Ezemvelo KZN Wildlife Head: Integrated Environmental Planning	Tel: 033-8451356 Fax: 033-8451499 Email: Andy.Blackmore@kznwildlife.com	Postal: P.O. Box 13053 Cascades 13053 Physical: Queen Elizabeth Park Peter Brown Drive Montrose
Mr Ashley Starkey	Department of Water and Sanitation	Tel: 031-3362700 Fax: 031-3362849 E-mail: StarkeyA@dws.gov.za	Physical: Southern Life Building 9th Floor 88 Joe Slovo Street Durban 4000
Ms Annie van de Venter	Amafa / Heritage KwaZulu-Natal	Tel: 033-3946543 Fax: 033-3426097 E-mail: amafaddps@amafapmb.co.za	Postal: P.O. Box 2685 Pietermaritzburg 3201
Mr Bheki Makhoba	Umkhanyakude District Municipality	Tel: 035-5738600 Fax: 035-5731094 E-mail: communications@ukdm.gov.za	Postal: P.O. Box 449 Mkuze 3965

Appendix G – Impact Assessment Tables

IMPACT ASSESSMENT: DECOMMISSIONING PHASE																				
Activity	Environmental Aspect	Sensitivity / importance of environmental aspect		Impact	Nature of the Impact	With or without mitigation	Extent		Duration		Intensity / Magnitude		Consequence	Probability		Significance	Significance Rating (with no mitigation)	Significance Rating (with mitigation)	Risk of Mitigation not being implemented
Construction Activities	Loss of habitat and biodiversity	Highly sensitive: protected by legislation, pristine, unique, valued by community	5	Loss of habitat quality / potential ecological processes and ecosystem services.	Negative	Impact without mitigation	Impacts on entire neighbourhood or town	3	More than 1 but less than 5 years	3	Function and/or processes of the affected environmental aspect is disturbed to an extent where consequences are significant	5	16	Probable	3	48	Moderate	Negligible	Medium: the mitigation proposed is standard practice in the industry; however, it may not be followed by contractors, but is not difficult or complicated to implement
			5			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	10	Improbable	1	10			
Construction Activities	Impact on Flora	Highly sensitive: protected by legislation, pristine, unique, valued by community	5	Construction activities will result in the loss of vegetation and potentially the exacerbated encroachment of invasive, exotic and weed species.	Negative	Impact without mitigation	Impacts on entire neighbourhood or town	3	More than 1 but less than 5 years	3	Function and/or processes of the affected environmental aspect is disturbed to an extent where consequences are significant	5	16	Probable	3	48	Moderate	Negligible	Medium: the mitigation proposed is standard practice in the industry; however, it may not be followed by contractors, but is not difficult or complicated to implement
			5			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that natural processes are not affected	1	9	Possible but unlikely	2	18			
Construction Activities	Impact on Fauna	Highly sensitive: protected by legislation, pristine, unique, valued by community	5	Disturbance to habitat.	Negative	Impact without mitigation	Impacts on entire neighbourhood or town	3	More than 1 but less than 5 years	3	Function and/or processes of the affected environmental aspect is disturbed to an extent where it permanently ceases	4	15	Probable	3	45	Moderate	Negligible	Medium: the mitigation proposed is not standard practice or is often ignored by contractors, but is not difficult or complicated to implement
			5			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that natural processes are not affected	1	9	Possible but unlikely	2	18			
Construction Activities	Surface water	Moderate to highly sensitive: pristine, rare, under threat and valuable to the community	4	Pollution of water resources	Negative	Impact without mitigation	Impacts on entire neighbourhood or town	3	More than 1 but less than 5 years	3	Function and/or processes of the affected environmental aspect is disturbed to an extent where it temporarily ceases	3	13	Highly probable	4	52	Moderate	Negligible	Low: the mitigation proposed is standard practice in the industry
			4			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that natural processes are not affected	1	8	Possible but unlikely	2	16			
Construction Activities	Groundwater	Highly sensitive: protected by legislation, pristine, unique, valued by community	5	Contamination / Water quality	Negative	Impact without mitigation	Impacts on entire neighbourhood or town	3	More than 1 but less than 5 years	3	Function and/or processes of the affected environmental aspect is disturbed to an extent where it permanently ceases	4	15	Probable	3	45	Moderate	Negligible	Low: the mitigation proposed is standard practice in the industry
			5			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	10	Possible but unlikely	2	20			
		Moderate to highly sensitive:	4			Impact without mitigation	Impacts on neighbouring properties	2	Construction or decommissioning period (less than 1 year)	2	Function and/or processes of the affected environmental aspect is disturbed to an extent where it permanently ceases	4	12	Highly probable	4	48			Low: the mitigation proposed is

Construction Activities	Soil pollution and Erosion	pristine, rare, under threat and valuable to the community	4	Contamination, erosion, quality / quantity	Negative	Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	9	Possible but unlikely	2	18	Moderate	Negligible	standard practice in the industry
Construction Activities	Air Quality	Moderate to highly sensitive: pristine, rare, under threat and valuable to the community	4	Dust / nuisance	Negative	Impact without mitigation	Impacts on neighbouring properties	2	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	10	Probable	3	30	Low	Negligible	Low: the mitigation proposed is standard practice in the industry
			4			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that natural processes are not affected	1	8	Possible but unlikely	2	16			
Construction Activities	Noise Disturbance	Highly sensitive: protected by legislation, pristine, unique, valued by community	5	Noise nuisance	Negative	Impact without mitigation	Impacts on neighbouring properties	2	Construction or decommissioning period (less than 1 year)	2	Function and/or processes of the affected environmental aspect is disturbed to an extent where it temporarily ceases	3	12	Highly probable	4	48	Moderate	Low	Low: the mitigation proposed is standard practice in the industry
			5			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	10	Probable	3	30			
Construction Activities	Traffic Impact	Moderately sensitive: Contains unique features, under threat and/or of value to some stakeholders	3	Traffic delays, Safety	Negative	Impact without mitigation	Impacts on entire neighbourhood or town	3	Construction or decommissioning period (less than 1 year)	2	Function and/or processes of the affected environmental aspect is disturbed to an extent where it temporarily ceases	3	11	Probable	3	33	Low	Low	Medium: the mitigation proposed is not standard practice or is often ignored by contractors, but is not difficult or complicated to implement
			3			Impact With Mitigation	Impacts on neighbouring properties	2	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	9	Probable	3	27			
Construction Activities	Visual Impact	Moderate to highly sensitive: pristine, rare, under threat and valuable to the community	4	Visual Impact	Negative	Impact without mitigation	Impacts on neighbouring properties	2	Construction or decommissioning period (less than 1 year)	2	Function and/or processes of the affected environmental aspect is disturbed to an extent where it temporarily ceases	3	11	Highly probable	4	44	Moderate	Low	Low: the mitigation proposed is standard practice in the industry
			4			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	9	Probable	3	27			
Construction Activities	Safety	Moderate to highly sensitive: pristine, rare, under threat and valuable to the community	4	Workers and Public Safety	Negative	Impact without mitigation	Impacts on neighbouring properties	2	Construction or decommissioning period (less than 1	2	Function and/or processes of the affected environmental aspect is disturbed to an extent where	5	13	Probable	3	39	Low	Negligible	Low: the mitigation proposed is standard practice in the industry
			4			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	9	Possible but unlikely	2	18			
Construction Activities	Cultural or Historical Sites	Highly sensitive: protected by legislation, pristine, unique, valued by community	5	Heritage items	Negative	Impact without mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1	2	Function and/or processes of the affected environmental aspect is disturbed to an extent where	5	13	Possible but unlikely	2	26	Low	Negligible	Medium: the mitigation proposed is standard practice in the industry; however, it may not be followed by contractors, but is not difficult or complicated to implement
			5			Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	Function and/or processes of the affected environmental aspect is disturbed to an extent where it temporarily ceases	3	11	Improbable	1	11			
	Waste	Moderate to highly sensitive: pristine, rare,	4			Impact without mitigation	Impacts on entire neighbourhood or town	3	Construction or decommissioning period (less than 1 year)	2	Function and/or processes of the affected environmental aspect is disturbed to an extent where it permanently ceases	4	13	Highly probable	4	52			Medium: the mitigation proposed is standard practice in the industry; however, it may

Construction Activities	Waste Generation	[illegible] under threat and valuable to the community	4	Pollution of air, soil and water resources	Negative	Impact With Mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that the aspect is altered, but functions and processes continue in a modified way	2	9	Possible but unlikely	2	18	Moderate	Negligible	[illegible] not be followed by contractors, but is not difficult or complicated to implement
Construction Activities	Socio-Economic	Moderately sensitive: Contains unique features, under threat and/or of value to some stakeholders	3	Employment	Positive	Impact without mitigation	Activity Footprint or site only	1	Construction or decommissioning period (less than 1	2	The activity affects the aspect in such a way that natural processes are not affected	1	7	Possible but unlikely	2	14	Negligible	Low	Medium: the mitigation proposed is standard practice in the industry; however, it may not be followed by contractors, but is not difficult or complicated to implement
			3			Impact With Mitigation	Impacts on entire neighbourhood or town	3	Construction or decommissioning period (less than 1 year)	2	The activity affects the aspect in such a way that natural processes are not affected	1	9	Highly probable	4	36			

		Not sensitive -	1		Positive		Activity Footprint o	1	Immediate short-	1	The activity affects the aspect in s	1	Improbable	1	Negligible	3	High: the mitigation proposed is expensive, not standard practice and/or complicated		
		Somewhat sen	2		Negative		Impacts on neighbo	2	Construction or c	2	The activity affects the aspect in s	2	Possible but	2	Low	2	Medium: the mitigation proposed is standard practice in the industry; however, it may not be followed by contractors, but is not difficult or		
		Moderately se	3				Impacts on entire n	3	More than 1 but	3	Function and/or processes of the	3	Probable	3	Moderate	1	Low: the mitigation proposed is standard practice in the industry		
		Moderate to h	4				City-wide impact	4	For the life of the	4	Function and/or processes of the	4	Highly proba	4	High				
		Highly sensitiv	5				Impacts beyond ad	5	Permanent	5	Function and/or processes of the	5	Definite	5	Unacceptable				

Category	Description	Score
Extent (Scale)	Site only (less than 5ha)	1
	Local (impacts on negihbouring	2
	Provincial	3
	National	4
	Global	5
Duration	Less than 1 month	1
	Immediate short-term (less tha	2
	Construction or decommission	3
	For the life of the operation	4
	Permanent	5
Intensity of impact on the resource (Magnitude)	Will have an insiganificant impa	1
	Will generate an impact of low	2
	Will generate an impact of mod	3
	Will have a significant impact o	4
Irreplaceable loss of resources	No / Minor irreplaceable loss	0
	Partial irreplaceable loss	1
	Major loss of irreplaceable reso	2
	Full loss of irreplaceable resour	5
Probability	Improbable	0.5
	Possible but unlikely	1
	Probable	2
	Highly probable	3
	Definite	4
Sensitivity of Aspect	Not sensitive - widespread, inta	1
	Somewhat sensitive: not totall	2
	Moderately sensitive: Contains	3
	Moderate to highly sensitive: p	4
	Highly sensitive: protected by l	5

The activity affects	1
The activity affects	2
Function and/or pr	3
Function and/or pr	4
Function and/or pr	5

IMPACT ASSESSMENT: NO-GO															
Activity	Environmental Aspect	Sensitivity / importance of environmental aspect	Nature of the Impact	With or without mitigation	Extent	Duration	Intensity / Magnitude	Consequence	Probability	Significance	Significance Rating (with no mitigation)	Significance Rating (with mitigation)	Risk of Mitigation not being implemented
Redundant infrastructure	Biodiversity	Highly sensitive: protected by legislation, pristine, unique, valued by community 5	Negative	Impact without mitigation	Impacts on neighbouring properties 2	Permanent 5	Function and/or processes of the affected environmental aspect is disturbed to an extent where it permanently ceases 5	17	Probable 3	51	Moderate	Moderate	High: the mitigation proposed is expensive, not standard practice and/or complicated
		5		Impact With Mitigation	Impacts on neighbouring properties 2	Permanent 5	Function and/or processes of the affected environmental aspect is disturbed to an extent where it permanently ceases 5	17	Probable 3	51			
Redundant infrastructure	Surface and groundwater sources	Moderate to highly sensitive: pristine, rare, under threat and valuable to the community 4	Negative	Impact without mitigation	Impacts on entire neighbourhood or town 3	Permanent 5	Function and/or processes of the affected environmental aspect is disturbed to an extent where it temporarily ceases 3	15	Probable 3	45	Moderate	Moderate	High: the mitigation proposed is expensive, not standard practice and/or complicated
		4		Impact With Mitigation	Impacts on entire neighbourhood or town 3	Permanent 5	Function and/or processes of the affected environmental aspect is disturbed to an extent where it temporarily ceases 3	15	Probable 3	45			
Redundant infrastructure	Safety	Highly sensitive: protected by legislation, pristine, unique, valued by community 5	Negative	Impact without mitigation	Impacts on neighbouring properties 2	Permanent 5	Function and/or processes of the affected environmental aspect is disturbed to an extent where it permanently ceases 5	17	Probable 3	51	Moderate	Moderate	High: the mitigation proposed is expensive, not standard practice and/or complicated
		5		Impact With Mitigation	Impacts on neighbouring properties 2	Permanent 5	Function and/or processes of the affected environmental aspect is disturbed to an extent where it permanently ceases 5	17	Probable 3	51			

Not sensitive -	1	Positive		Activity Footprin	1	Immediate sho	1	The activity affects the asp	1	Improbable	1	Negligible	3	High: the mitigation proposed is expensive, not standard practice and/or complicated
Somewhat ser	2	Negative		Impacts on neigh	2	Construction o	2	The activity affects the asp	2	Possible bu	2	Low	2	Medium: the mitigation proposed is not standard practice or is often ignored by contractors, but is not difficult or complicated to implement
Moderately se	3			Impacts on entir	3	More than 1 bu	3	Function and/or processes	3	Probable	3	Moderate	1	Low: the mitigation proposed is standard practice in the industry
Moderate to h	4			City-wide impact	4	For the life of t	4	Function and/or processes	4	Highly prob	4	High		
Highly sensitiv	5			Impacts beyond	5	Permanent	5	Function and/or processes	5	Definite	5	Unacceptable		