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EKO GROUP (PTY) LTD trading as Eko Environmental
Reg no. 2017/311178/07
VAT No. 4020225811

DRAFT BAR AND EMPr:

INSTALLATION OF ABOVEGROUND DIESEL STORAGE TANKS ON PORTION 76 OF FARM BULTFONTEIN 80 JUST OUTSIDE KIMBERLEY, SOL PLAATJIE MUNICIPALITY, FRANCES BAARD DISTRICT MUNICIPLAITY, NORTHERN CAPE

DENC Ref. No.: NC/BA/05/FB/SOL/KIM/2020
Case Officer: Mrs D Werth
Email: DWerth@ncpg.gov.za

September 2020

Applicant:

DG Carriers

Contact person:	Mr Gerbrand van der Walt
Address:	P.O. Box 110046 Hadisonpark Kimberley 8301
Tel:	083 399 0990

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Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

Private Bag X6102, Kimberley, 8300, Metlife Towers, T-Floor, Tel: 053 807 7300, Fax: 053 807 7328

Project applicant:	DG Carriers (Pty) Ltd		
Business reg. no. /ID. no.:	2014/200234/07		
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(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

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

Kindly note that:

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

SECTION A: ACTIVITY INFORMATION

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

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

1. ACTIVITY DESCRIPTION

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

The proposed project involves the installation of aboveground Diesel Storage Tanks on Portion 76 of Farm Bultfontein 80, Kimberley, Northern Cape. The client (DG Carriers) wishes to operate a diesel depot where they store diesel for their trucking business. The proposed site, Portion 76 of Farm Bultfontein 80, is a large farm portion (21.4 ha) with several industrial related activities taking place on the farm portion. The proposed site is located approximately 4.7km south-west of Kimberley along the N12 and is accessible from the N12 via a short gravel road. The site coordinates are 28°47'34.11"S; 24°43'11.00"E.

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

Listed activity as described in GN 327, 325 and 324	Description of project activity
Example: ***GN 327 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.***	***A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river***
GN R. 327 Item 14: *the development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 m^3 or more but less than 500 m^3.*	The proposed installation of above-ground storage tanks for the storage of diesel with a combined capacity of 207 m^3 (207 000 L). Three storage tanks will have a capacity of 23 m^3 each and three storage tanks will have a capacity of 46m^3 each.

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

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

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

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The project involves the proposed Installation of above-ground storage tanks for the storage of dangerous goods on Portion 76 of Farm Bultfontein 80, Kimberley, Northern Cape. The proposed site is considered as the preferred alternative as the client already stores diesel at this location, approximately 69m^3 and wishes to expand the current capacity to accommodate approximately 300m^3. In addition, the client already has existing agreements between them and the landowner regarding the said operations. The proposed site is located on a farm portion that is host to several industrial activities with a truck cleaning facility and a brick making facility being some. This site was considered as the preferred alternative site as no	28°47'34.11"S	24°43'11.00"E.

other adjacent property will have a lower impact on the environment than the proposed site		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
No alternative site was considered for the abovementioned reasons.		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
No alternative site was considered for the abovementioned reasons.		

In the case of linear activities:

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

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

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

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The preferred layout alternative will be as indicated in the Maps in appendix A. The area on the farm portion that was chosen for the proposed development is situated close to existing electrical facilities on the farm which will reduce costs. The selected location is the area approved by the landowner of the farm portion and is already in use for said proposes making it the most ideal. The proposed layout is situated on a flat area will little variation in topography which reduces the risk of runoff and subsequent contamination. This also makes the management and handling of storm water easier.	28°47'34.11"S	24°43'11.00"E.

Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
No alternative was considered		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
No alternative was considered		

c) Technology alternatives

Alternative 1 (preferred alternative)
The preferred technology alternative includes the connection of services with existing municipal services in the area such as for electricity. No water or sewage is produced or used in this proposed activity and therefore they are not considered.
Alternative 2
The alternative to the preferred technology alternative is to construct specific services infrastructure on the site for the following: 1. Electricity: the implementation of solar/renewable energy sources will be assessed in this report.
Alternative 3

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

Alternative 1 (preferred alternative)		
Alternative 2		
Alternative 3		

e) No-go alternative

If the no-go alternative is decided on no construction will occur on the property and no environmental impacts will occur.

However, if the no-go alternative is decided on the opportunity will be lost to create temporary jobs and a positive impact on the socio-economic during the construction phase as the proposed project will provide people with direct jobs and also indirect jobs and economic gain through providing the applicant with building material and services.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	+- 200 m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

or, for linear activities:

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

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

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

4. SITE ACCESS

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

Describe the type of access road planned:

The site is accessible from the N12 via a short gravel road (refer to maps in appendix A)

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

5. LOCALITY MAP

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

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;

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

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

6. LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

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

7. SENSITIVITY MAP

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

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

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

8. SITE PHOTOGRAPHS

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

9. FACILITY ILLUSTRATION

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

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
The area is zoned as vacant or unspecified.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
The Northern Cape PSDF is based upon, and promotes, an integrated and holistic approach to spatial planning and land-use management which implies that the interrelationships between economic activities and other developmental dimensions (e.g. social, financial, demographic, institutional, and infrastructural aspects), and environmental constraints and opportunities are carefully considered in accordance with a standard framework and at all applicable spheres of planning, ranging from the international to the local level			
(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
The activity will take place outside the urban edge			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO	Please explain
The activity will not compromise the integrity of the existing IDP and SDF of the Sol Plaatje Local Municipality or Francis Baard District Municipality as it is privately operated and privately owned.			
(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
N/A			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain
The project will not compromise the Environmental Management Framework of the Department as the zoning of the area is vacant/unspecified and the land is currently being used for industrial and or other business purposes.			
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain
N/A			

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	NO	Please explain
The zoning of the area is vacant / unspecified and the land is currently being used for industrial purposes.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES	NO	Please explain
The project is not a priority to the community but could provide additional fuel (diesel) to the surrounding area. The proposed project will also create direct and indirect temporary jobs for local residents during the operational phase of the project.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
The proposed project is located outside the urban area and adequate services and capacity are available for the proposed project.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
It is not expected that this project will affect the infrastructure planning of the municipality.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO	Please explain
The project is not of national concern and involves the installation of above-ground storage tanks for the storage of dangerous goods (i.e. diesel).			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	NO	Please explain
The current zoning of the area is vacant / unspecified, but the land is currently being used for industrial and business purposes. Therefore, the location of the proposed site does favour the proposed activity.			

9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
The current zoning of the area is vacant/unspecified and the land is currently being used for industrial purposes. Therefore, the proposed development would be the best practicable environmental option for this site.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	NO	Please explain
The site has minimal to no ecological value, thus the impact on environment in the area will be limited to none (refer to the ecological report in appendix D). The proposed project will benefit the community as it will create jobs during the construction and operational phases.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain
The current zoning of the area is vacant/unspecified and the land is currently being used for industrial purposes. There are similar activities in the surrounding areas.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO	Please explain
The proposed site is currently used for industrial purposes. A Public Participation Process has begun (and will be continued) to ensure that all the surrounding landowners are informed of the project and do not have any concerns regarding the project.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO	Please explain
The proposed activity is not located within the urban edge and therefore will not compromise the urban edge.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
N/A			
15. What will the benefits be to society in general and to the local communities?			Please explain
The proposed project will benefit the community as it will create jobs during the construction and operational phases. There will be an additional source of fuel for the surrounding community and farmers.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
None			
17. How does the project fit into the National Development Plan for 2030?			Please explain
N/A – The project has no significance on the National Development Plan for 2030.			

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

An assessment has been undertaken to evaluate potential impacts and to propose possible mitigation measures to lower the impacts on the environment, social conditions and cultural heritage which may arise as a result of the development. A public participation was undertaken in terms of the 2014 EIA Regulations as amended in 2017.

Consideration of environmental attributes in management and decision-making which may have a significant effect on the environment will be ensured; and

The modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2 of the NEMA will be identified and employed.

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

The following principles have been taken into account:

- Avoiding or minimizing the disturbance to ecosystems;
- That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimized and remedied;
- That the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimized and remedied;
- That waste is avoided, or where it cannot be altogether avoided, minimized and re-used or recycled where possible and otherwise disposed of in a responsible manner;
- That the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- That the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardized;
- That a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions;
- That negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimized and remedied.
- Promotion of community participation through an extensive and open public participation process with I&APs;

Delivery of high quality information to government and other decision-makers in order to enable them to make informed decisions.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act 107 of 1998	Competent authority on the project. Consultation with Northern Cape DENC regarding the project.	Northern Cape Department of Environment and Nature Conservation	1998

Occupational Health and Safety Act 85 of 1993	Comply to OHSA during construction phase	Department of Labor	1993
National Water Act 36 of 1998	The area will be assessed to determine the impact (if any) on water resources. DWS is included in the PPP.	Department of Water and Sanitation	1998
National Building Regulations and Building Standards Act 103 of 1977	The developer must comply with building regulations during the construction phase of the project.	National Regulator for Compulsory Specifications	1977

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

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

N/A

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

N/A

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

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

N/A

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

N/A

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

N/A

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

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

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

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

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

b) Liquid effluent

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

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

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

If YES, provide the particulars of the facility:

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

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

c) Emissions into the atmosphere

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

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

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

The diesel that will be stored is volatile and a fraction of the total amount might be vented to the atmosphere. The amounts lost due to volatility are negligible.

d) Waste permit

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

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

e) Generation of noise

Will the activity generate noise?	YES	NO
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

Describe the noise in terms of type and level:

13. WATER USE

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

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

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:		litres
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES	NO

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

14. ENERGY EFFICIENCY

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

The proposed activity will make use of minimal energy as the only energy required is for the pumping of the fuel. Solar panels will be considered as an alternative to provide the required energy for the pumps. Solar panels are already used for lighting and security systems on site.

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

The proposed activity will make use of minimal energy as the only energy required is for the pumping of the fuel. Solar panels will be considered as an alternative to provide the required energy for the pumps as it is already used for other activities on site.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

Section B Copy No. (e.g. A): **A**

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

3. Has a specialist been consulted to assist with the completion of this section? YES | NO

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

Property description/physical address:

Province	Northern Cape
District Municipality	Frances Baard District Municipality
Local Municipality	Sol Plaatje Local Municipality
Ward Number(s)	Ward 26
Farm name and number	Farm Bultfontein 80
Portion number	76
SG Code	C03700000000008000076

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

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

Vacant/unspecified

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

Is a change of land-use or a consent use application required? YES | NO

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

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

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

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

4. GROUNDCOVER

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

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

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

5. SURFACE WATER

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

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

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

6. LAND USE CHARACTER OF SURROUNDING AREA

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

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation

Informal residential	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, Koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

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

There is a railway line that borders the southern part of the proposed site. The proposed activity will not impact the railway line in any way as access to the proposed site is on northern side and via a road (N12).

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

N/A

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

N/A

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

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
Core area of a protected area?	YES	NO
Buffer area of a protected area?	YES	NO
Planned expansion area of an existing protected area?	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO
Buffer area of the SKA?	YES	NO

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

7. CULTURAL/HISTORICAL FEATURES

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

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

Refer to the heritage impact assessment in appendix D

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

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

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

Level of unemployment is 31.9% in Sol Plaatje Local Municipality with youth unemployment being higher at 41.7% (Stats SA 2011).

Economic profile of local municipality:

Sol Plaatje Local Municipality, according to Stats SA 2011, has a total population of 248 041. Of this total population, a total of 63 049 people is employed with 64 250 being Not Economically Active. 7474 of the total population are discouraged work seekers and 29 514 are unemployed.

Level of education:

1.6% of the population have some form higher education, 14.6% completed secondary school and 31.7% have some secondary schooling. 6.1% have completed primary school while 40.7% have some primary school experience. 3.7% have no schooling experience (Stats SA 2011).

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R350 000	
What is the expected yearly income that will be generated by or as a result of the activity?	R2 200 000	
Will the activity contribute to service infrastructure?	YES	NO
Is the activity a public amenity?	YES	NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	6	
What is the expected value of the employment opportunities during the development and construction phase?	+- R80 000 pm	
What percentage of this will accrue to previously disadvantaged individuals?	%100	

How many permanent new employment opportunities will be created during the operational phase of the activity?	3
What is the expected current value of the employment opportunities during the first 10 years?	R9 600 000
What percentage of this will accrue to previously disadvantaged individuals?	%100

9. BIODIVERSITY

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

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

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	The area is located on a farm portion that is host to several industrial activities. Some natural areas are present on the eastern and western edges of the site.

b) Indicate and describe the habitat condition on site

Habitat Condition	**Percentage of habitat condition class (adding up to 100%)**	**Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).**
Natural	45%	Natural vegetation occurs on the eastern and western edges of the farm portion. The proposed activity will occur in the centre where the other activities currently take place and where the land has already been transformed..
Near Natural (includes areas with low to moderate level of alien invasive plants)	5%	

Degraded (includes areas heavily invaded by alien plants)	0%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	50%	The area is located on a farm portion that is host to several industrial related activities and has already been largely transformed in the centre where the proposed project is located.

c) Complete the table to indicate:

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

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

Terrestrial Ecosystems		**Aquatic Ecosystems**						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened	YES	NO	UNSURE	YES	NO	YES	NO

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

The proposed development occurs in an existing light industrial complex and natural areas have already been cleared of vegetation. The natural vegetation type in this area consists of Kimberley Thornveld (Svk 4). This vegetation type is listed as being of Least Concern (LC) under the National List of Threatened Ecosystems (Notice 1477 of 2009) (National Environmental Management Biodiversity Act, 2004). This is mostly due to it being widespread, with moderate species diversity, relatively uniform and not currently subjected to any pronounced development pressures.

Please refer to the ecological assessment conducted by Mr Darius van Rensburg in appendix D.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Noordkaap (part of the Media 24 and Volksblad Group)	
Date published	01st July 2020	
Site notice position	**Latitude**	**Longitude**
	28°47'31.91"S	24°43'11.76"E
	28°47'33.64"S	24°43'9.94"E
Date placed	30th June 2020	

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

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Mr Braam Coetzee	Neighbor and landowner	C: 082 773 5192
Mr Jacques Smit (Representative of Al 2 Stadler	Neighbor	C: 082 448 4152 E: jacques@premipoint.co.za
Mr Trevor (representative of Roadspan)	Neighbor	C: 082 822 0979 E: trevor@cgoc.co.za
Carina van Niekerk (Representative of Little River lodge)	Neighbor	C: 083 225 8275 E:
Natasha Phyffer (Representative of Yesterdays Antiques)	Neighbor	C: 083 650 7290 E: natasja.phyffer@gmail.com

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

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

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No issues have been raised at this point of the project.	

4. COMMENTS AND RESPONSE REPORT

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

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Department of Water and Sanitation (Northern Cape, Kimberley)	Lerato Mokhoantle	Tel: 053 830 8800/ 7600	Fax: 053 831 4534	mokhoantlel@dws.gov.za	Private Bag X6101 Kimberley 8300
Northern Cape Department of Environment and Nature Conservation	Thulani Mthombeni	Tel: 053 807 7430		Tmthombeni@ncpg.gov.za	Private Bag X6120, Kimberley, 8301
Sol Plaatje Local municipality	Mr Keith Williams	Tel: 053 830 6911		kwilliams@solplaatje.org.za aswart@solplaatje.org.za	Private Bag X5030, Kimberley, 8300
Sol Plaatje Local Municipality (Ward councilor of ward 26)	Mr Bonsile John Makhamba	Tel: 053 830 6911 / 072 263 3876		bonsilejmakhamba@gmail.com	Private Bag X5030, Kimberley, 8300

Fraances Baard District Municipality	Mr Kenneth Lucas	Tel: 053 838 0970	Fax: 053 861 1538	Kenneth.lucas@fbdm.co.za	Private Bag X6088, Kimberley, 8300

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

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

6. CONSULTATION WITH OTHER STAKEHOLDERS

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

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

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

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

SECTION D: IMPACT ASSESSMENT

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

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

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

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Construction of infrastructure and buildings	***Direct impacts:*** ➢ Possible change in the natural storm water drainage pattern ➢ Noise elevation due to construction activities ➢ Nuisance due to dust generation ➢ Unearthing of significant heritage artefacts	Low Negative	➢ The site will be levelled in such a manner to allow storm water to be diverted around the site and drain into the surrounding storm water channels. ➢ Storm water measures such as channels, diversion berms, etc will be constructed on the site in order to limit and/or prevent erosion. ➢ A speed limit will be enforced on construction vehicles. ➢ Construction will be limited to daytime to limit any disturbance to neighbouring landowners. ➢ Dust control measurements will be investigated if nuisance dust generation proves to be problematic ➢ SAHRA will be notified should traces of any paleontological heritage be found during construction. ➢ Receptacles should be placed on site for the

Activity	Impact summary	Significance	Proposed mitigation
			collection of general waste. These receptacles should be emptied on a regular basis and waste be disposed of at the authorised landfill site in the area.
	Indirect impacts: None		
	Cumulative impacts: None		
Operational Phase	***Direct impacts:*** ➢ Potential pollution to storm water if proper storm water management measures are not implemented. ➢ Potential water pollution may occur if diesel from the operation is not managed appropriately. ➢ Potential pollution to the surrounding environment due to diesel spills.	Low Negative	➢ The storm water management measures that will be constructed and implemented during construction will be maintained and repaired when necessary. ➢ The diesel stored in the storage tanks will be handled with care at all times and those transporting and pumping the diesel will be given training on how to carefully handle diesel to prevent spills and contamination to the surrounding environment. ➢ General waste (i.e. paper, plastic, glass bottles, etc.) will be collected in receptacles on site. These receptacles will be emptied and the waste disposed of at an authorised landfill site on at least a weekly basis (or when necessary). ➢ Toilets will be supplied to employees to be used.
	Indirect impacts: Deterioration of the access road as a result of increased traffic to the site.	Low Negative	➢ The access road will have to be upgraded when and if necessary.
	Cumulative impacts: None		

Activity	Impact summary	Significance	Proposed mitigation
Decommissioning and Closure Phase	***Direct Impacts*** No Decommissioning Phase is foreseen for the proposed project.	Low Negative	➢ Should the diesel depot be decommissioned in future, a Rehabilitation Plan dependant on the end land use will be developed and be submitted to the Department for approval.
Alternative 2			
Technology alternative – Connecting of services (i.e. electrical, sewage)			
Construction Phase			
Activities will be the same as the site alternatives	***Direct impacts:*** Potential impacts will be the same as indicated in the site alternative as the activities will occur simultaneously.	Low Negative	Refer to site alternative mitigation.
	Indirect impacts:		
	Cumulative impacts:		
Alternative 2 – Solar energy and electrical energy			
Activities will be the same as the site alternatives	***Direct impacts:*** *Impacts associated will be the same as indicated at the site alternatives with the addition of the following impacts:* Solar panels will increase the initial cost of the proposed activity.	Low Negative	➢ There is already municipal power available on the proposed site and the associated infrastructure is already in place.
	Indirect impacts: The use of renewable energy will reduce the carbon footprint of the development.	Low Positive	➢ The applicant already makes use of solar energy for lighting at the site and will consider the further use of solar energy for the pumps to be installed at the storage tanks.
	Cumulative impacts: - The use of renewable energy will reduce the carbon footprint of the development.	Low Positive	
No-go option			
	Direct impacts: None		
	Indirect impacts: No environmental impact will occur as a result of the no-go alternative. However, the chance to create an		

Activity	Impact summary	Significance	Proposed mitigation
	opportunity for fuel providers in the area to lower costs and provide people from the local community with job opportunities that will be associated with the Construction and Operational Phases will be lost.		
	Cumulative impacts: None		

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative A (preferred alternative)

The likelihood of the expected impacts actually occurring will be small and minimal if all the recommended mitigation measures are implemented throughout all the phases of the project.

Impacts that will be associated with the Construction Phase will be temporary and minimal in nature. Although the activities that will be associated with the Operational Phase will be permanent, the potential impacts expected to be associated with this phase will be temporary and local in nature if the recommended mitigation measures are implemented. If proper management of any waste (if any) and good housekeeping (awareness to preventing spills), the likelihood of the potential impacts actually occurring will be low.

In conclusion, if all the recommended measures are implemented, the significance of the impacts expected to be associated with the storage tanks, for the storage of diesel, will be low.

Alternative B

None

Alternative C

None

No-go alternative (compulsory)

No environmental impact will occur as a result of the no-go alternative. However, the chance to create an opportunity for fuel providers in the area to lower costs and provide people from the local community with job opportunities that will be associated with the Construction and Operational Phases will be lost.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES	NO

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

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

In addition to the recommended mitigation and management measures described in Part 2 of Section D, the following conditions are recommended:

Specific

- No operation will commence without the necessary Environmental Authorisation.

General

- Measures to manage storm water and waste will be implemented and maintained to limit and/or prevent erosion, pollution.
- Spill kits for the handling of diesel spills must always be present at the site and staff must be trained to be able to use the kits appropriately.
- Receptacles should be placed on site for the collection of general waste. These receptacles should be emptied on a regular basis and waste be disposed of at an authorised landfill site in Kimberley
- No construction and / or any other waste will be dumped in the veld or on site.
- Temporary toilets will be placed on site during the construction phase and any sewage should be managed appropriately and should not be disposed of on site or the surrounding environment.

Is an EMPr attached?	YES	NO

The EMPr must be attached as Appendix G.

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

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

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

Richard Williamson

NAME OF EAP

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

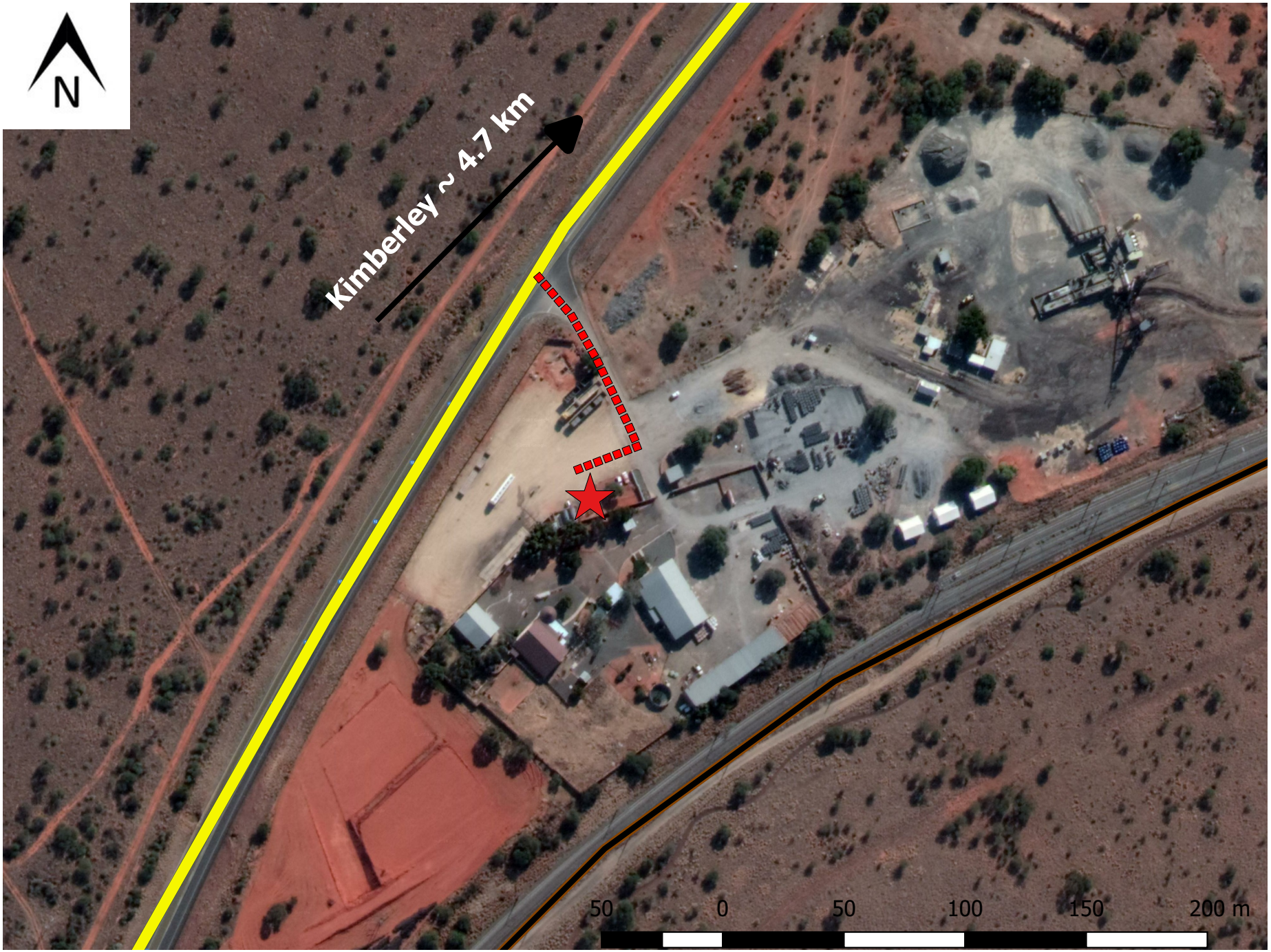
Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information



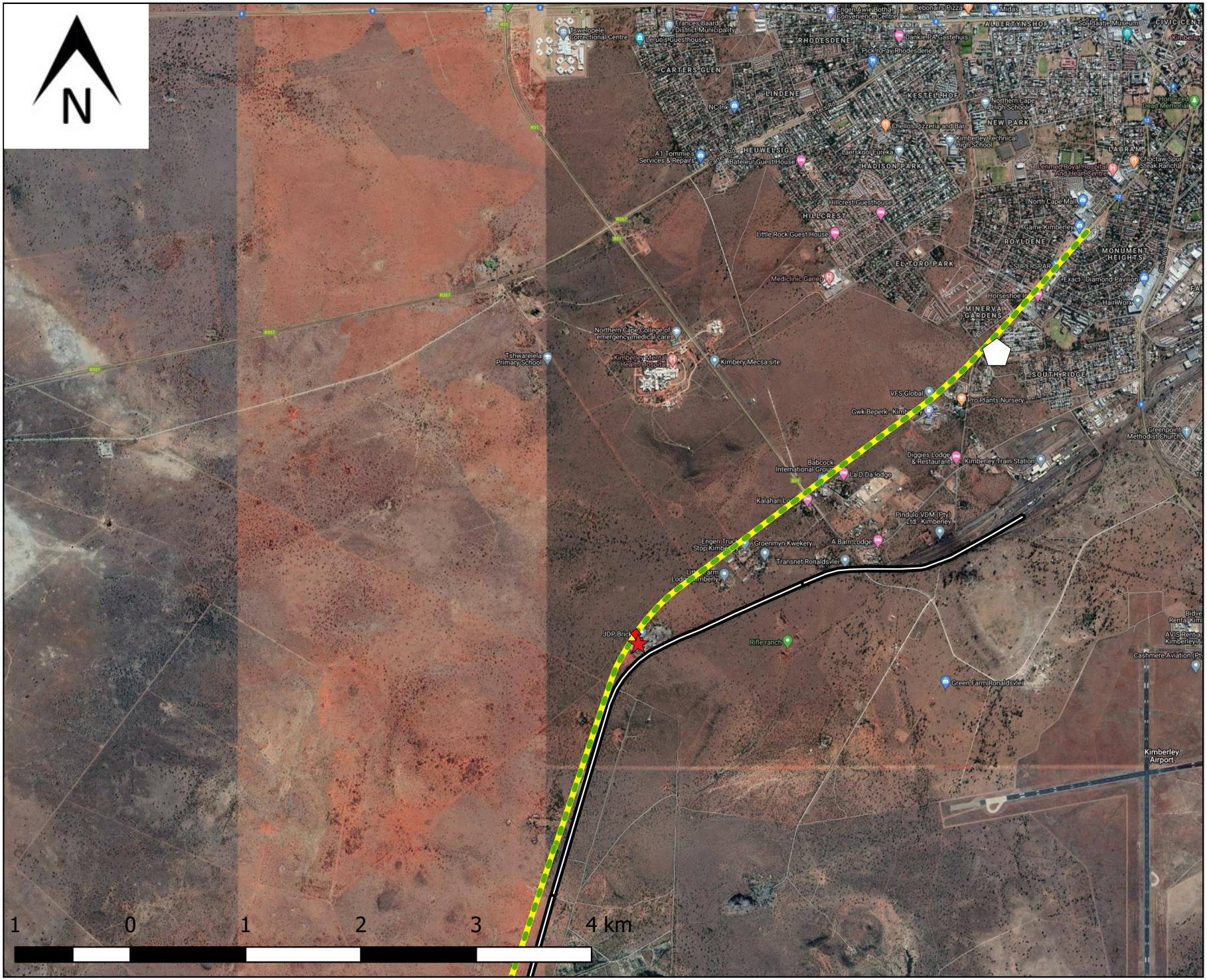
Map Legend

- Railway
- Access Road
- N12
- KBY DD (site)

Map 1: Diesel Depot (Kimberley) - Basic Map indicating the proposed site for the installation of above ground storage tanks for the storage of diesel. The proposed site is located on Portion 76 of Farm Bultfontein 80 which is located approximatey 4.7 km from Kimberley via the N12 in the Northern Cape.

Site Coordinates:
28°47'34.11"S
24°43'11.00"E

EKO•ENVIRONMENTAL



Map 2: Basic Location Map for the proposed installation of above ground storage tanks for the storage of diesel located south west of Kimberley. The proposed site is located on Portion 76 of Farm Bultfontein 80 which is located approximatey 4.7 km from Kimberley via the N12 in the Northern Cape.

Applicant: DG Carriers

Map Information:
Projection: WGS 84
Scale: 1: 50 000

Site Coordinates:
28°47'34.11"S
24°43'11.00"E

Environmental Consultant:
Eko Environmental
Tel: 051 444 4700
E: info@ekogroup.co.za

EKO•ENVIRONMENTAL

APPENDIX B

Photographic Report

	Photograph taken from the north western edge of the site towards the south east. Visible in the photograph are the existing storage tanks behind the stationary white truck. Directly to the left of the truck is the proposed area for the additional storage tanks as applied for in this application.
	Photograph taken from the centre of the site towards the south west. In the centre of the photograph is the existing pump that is connected to the existing storage tanks. In the background is a stationary truck at a wash bay.
	Photograph taken from the centre of the site towards the south of south west. Visible are the existing storage tanks used for the storage of diesel. Notice the bunded wall and appropriate signage and equipment is in place.

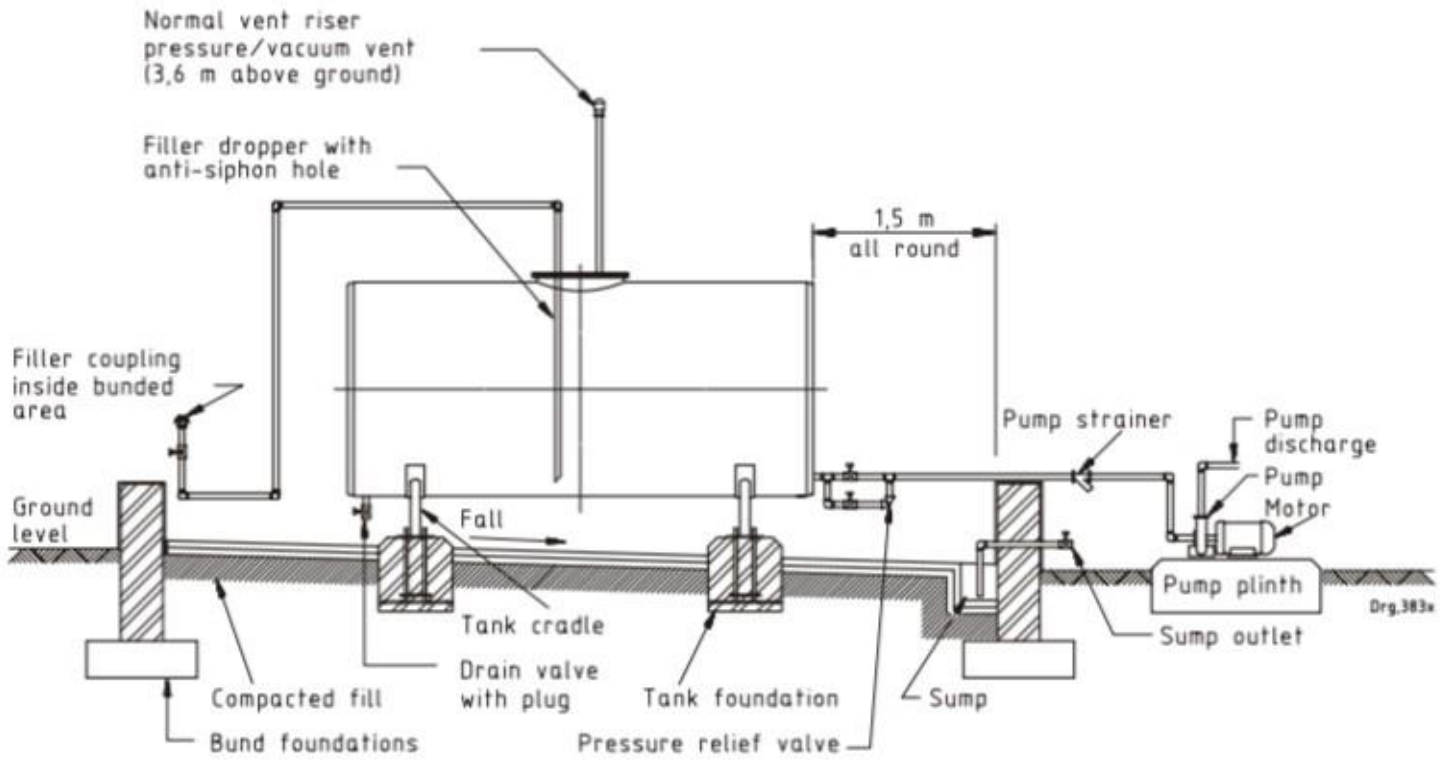
	Photograph taken from the centre of the site towards the south. Visible are the existing storage tanks used for the storage of diesel as well as a pump station. Notice the bunded wall and appropriate signage and equipment is in place.
	Photograph taken from the centre of the site towards the south east. Visible are the existing storage tanks used for the storage of diesel as well as a pump station. Notice the bunded wall and appropriate signage and equipment is in place. Also notice that directly left of the existing storage tanks is an open space that has already been concreted. This is the proposed site for the new storage tanks.
	Photograph taken from the centre of the site towards the south east. Visible is the proposed site for the new storage tanks.

	Photograph taken from the centre of the site towards the south. Visible is the proposed site for the new storage tanks. Notice the existing storage tanks on the right that is separated by a wall.
	Photograph taken from the centre of the site towards the south west. Take note of the drainage channel that has been installed for the collection of dirty stormwater. The drainage channel feeds into an oil separator where the dirty oil is separated into a hazardous waste container.
	Visible in the photograph are the access points for the oil separator and hazardous waste container which will be used in the this operation.

APPENDIX C

Facility Illustrations


to Kimberley
237/22
N12
to Ritchie
Legend
Site Development Plan (SDP)
ARCHITECTURE
DOCUMENTATION
Site Development Plan (SDP) Scale 1:500


Normal vent riser
pressure/vacuum vent
(3,6 m above ground)
Filler dropper with
anti-siphon hole
1,5 m
all round
Filler coupling
inside bunded
area
Pump strainer
Pump
discharge
Pump
Motor
Ground
level
Fall
Pump plinth
Drg.383x
Tank cradle
Sump outlet
Drain valve
with plug
Compacted fill
Tank foundation
Sump
Bund foundations
Pressure relief valve

Phase 1 Heritage Impact Assessment of proposed installation of aboveground storage tanks and associated infrastructure for the storage of diesel on Portion 76 of Farm Bultfontein 80, Kimberley, NC Province.

Report prepared by
Paleo Field Services PO Box 38806
Langenhovenpark
Bloemfontein, 9330
02/09/2020

Summary

A Phase 1 Heritage Impact Assessment was carried out for the proposed installation of aboveground storage tanks and associated infrastructure for the storage of diesel on Portion 76 of Farm Bultfontein 80 near Kimberley, NC Province. The affected area lies within an outcrop area of dolerite (Karoo Dolerite Suite) surrounded by Quaternary-age surface calcretes and aeolian sand. The terrain has been severely degraded by previous industrial and commercial activities. There are no indications of prehistoric structures or rock engravings within the footprint area. There is also no evidence of informal graves or historical structures older than 60 years within the confines of the footprint. The field assessment indicates that the proposed development will primarily affect degraded topsoils underlain by dolerite bedrock, which are not palaeontologically significant. Very little possibility exists that objects of palaeontological significance may be uncovered during the course of excavation activities into possibly *in situ* Quaternary soils overlying the terrain. In accordance with the types and ranges of heritage resources as outlined in the National Heritage Resources Act (No 25 of 1999), there is no aboveground evidence of historical structures or material of cultural significance, archaeological or palaeontological sites within the demarcated area. The site is assigned a heritage rating of General Protection C.

Introduction

A Phase 1 Heritage Impact Assessment was carried out for the proposed installation of aboveground storage tanks and associated infrastructure for the storage of diesel on Portion 76 of Farm Bultfontein 80 near Kimberley, NC Province (**Fig. 1**). The extent of the proposed development (over 5000 m2) falls within the requirements necessary for a Heritage Impact Assessment (HIA) as required by Section 38 (Heritage Resources Management) of the South African National Heritage Resources Act (Act No. 25 of 1999). The site visit and subsequent assessment took place in February 2014. The task involved identification of possible archaeological and palaeontological sites or occurrences in the proposed zone, an assessment of their significance, possible impact by the proposed development and recommendations for mitigation where relevant.

Methodology

The palaeontological and archaeological significance of the affected area was evaluated through a desktop study and carried out on the basis of existing field data, database information, published literature and geological maps. This was followed up with a field assessment by means of a pedestrian survey and investigation of exposures and outcrop within the footprint. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes.

Description of the Affected Area

Maps: 1:50 000 topographical map 2824 DC Spytfontein

1:250 000 geological map 2824 Kimberley

General Site Coordinates: 28°47'34.11"S 24°43'11.00"E

The site is situated next to the N12 national road between Kimberley and Hopetown on the farm Bultfontein 80 (**Fig. 2 & 3**). The proposed site lies on a farm portion that is already used by several other industrial operations (**Fig. 4**).

Geology

The geology of the region has been described by Bosch (1993). The area in question is underlain by sediments of widely different geological ages (**Fig. 5**, portion of 1: 250 000 scale geological map 2924 Koffiefontein, Council for Geoscience, Pretoria, 1991). From oldest to youngest, the geology in and around the affected area is made up of Permian Ecca shales (Whitehall Formations, *Pw*), Jurassic dolerite intrusions (*Jd,*

Karoo Dolerite Suite), Quaternary calcretes, surface limestones (*Qc*) and aeolian sands (*Qs*) (Kalahari Group).

Background

Karoo Fossils

Fossil-bearing, laminated basinal mudrocks of the Prince Albert Formation from the lowermost Ecca Group (*Ppw*) have been recorded near Douglas, containing petrified wood, invertebrates, fish, coprolites and palynomorphs from calcareous concretions (McLachlan and Anderson 1973, Visser *et al.,* 1977-78)**.**

Dolerites

Dolerite, in the form of dykes and sills, is common throughout the region. Regarded as feeders of Drakensberg lavas, dolerites are not palaeontologically significant and can be excluded from further consideration in the present evaluation. On the other hand, dolerite outcrop can be regarded as archaeologically significant since Stone Age lithic artifacts in the region are mostly made of hornfels, a fine-grained isotropic rock found in the hot-contact zone between the dolerites and shales in the area. As a result, stone tool factory sites are commonly found near dolerite-shale contact zones. In addition, rock engravings in the region are consistently found on dolerite.

Late Cenozoic Deposits

The occurrence of Plio-Pleistocene fossil remains is largely restricted to the alluvial gravel terraces of the Vaal River northeast of Kimberly and overbank sediments of the Modder and Riet Rivers situated to the east (Cooke 1949; Maglio and Cooke 1978; Partridge and Maud 2000; Churchill *et al.* 2001; Rossouw 2006). Gravel terraces of the Vaal River contain sandy lenses that have yielded several extinct vertebrate taxa.

Stone Age archaeology

The Stone Age archaeological footprint around Kimberley is well-represented by Early and Middle Stone Age localities from lacustrine and alluvial contexts, as well as rock engravings on dolerite outcrop (**Fig. 6**). Rock engraving sites are common around Kimberley and numerous engravings have been recorded on dolerite outcrop around the city.

Historical Heritage

Historical archaeology in the region is largely represented by the Kimberley diamond rush and the development of the South African Railway during the 19th century as well as the the South African War. Major battles occurred between the British and Boer forces in late 1899 south of the study area (**Fig. 6**). In November 1899, British general Methuen successfully fought the Boers at Belmont, Graspan and Modder River, while the Boers defeated the British forces at Magersfontein in December 1899 (Von der Heyde 2013).

Field Assessment

The affected area lies within an outcrop area of dolerite (Karoo Dolerite Suite) surrounded by Quaternary-age surface calcretes and aeolian sand (**Fig. 7**), but has been severely degraded by previous and ongoing industrial and commercial activities. There are no indications of prehistoric structures or rock engravings within the footprint area. There is also no evidence of informal graves or historical structures older than 60 years within the confines of the footprint.

Impact Statement & Recommendation

The field assessment indicates that the proposed development will primarily affect degraded topsoils underlain by dolerite bedrock, which are not palaeontologically significant. Very little possibility exists that objects of palaeontological significance may be uncovered during the course of excavation activities into possibly *in situ* Quaternary soils overlying the terrain.

In accordance with the types and ranges of heritage resources as outlined in the National Heritage Resources Act (No 25 of 1999), there is no aboveground evidence of historical structures or material of cultural significance, archaeological or palaeontological sites within the demarcated area. The site is assigned a heritage rating of General Protection C (**Table 1**).

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DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference and have no interest in secondary or downstream developments as a result of the authorization of this project.

Yours truly,

02 / 09 / 2020

Tables & Figures

Table1. Field rating categories as prescribed by SAHRA

Field Rating	**Grade**	**Significance**	**Mitigation**
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

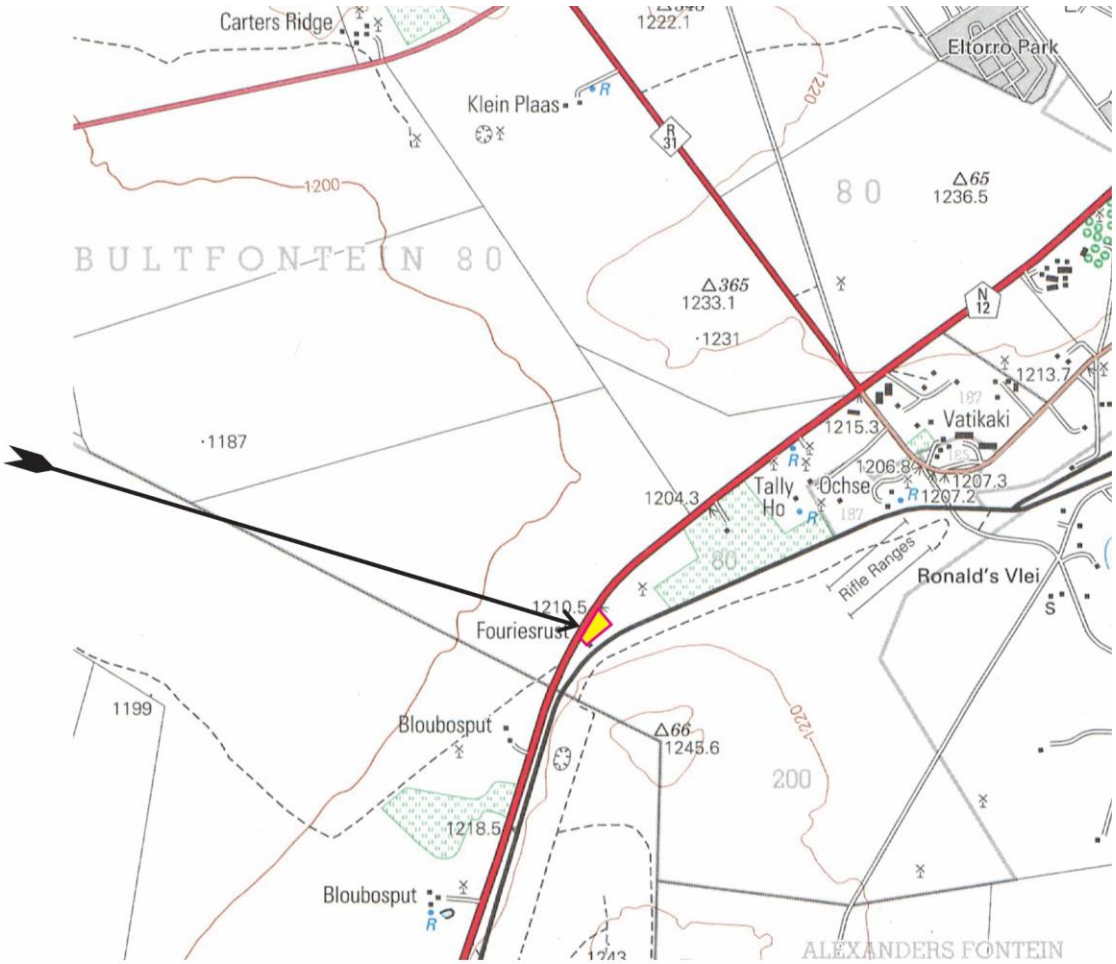


Figure 1. Map of the proposed development area (portion of 1:50 000 scale topographic map 2824 DC Spytfontein).

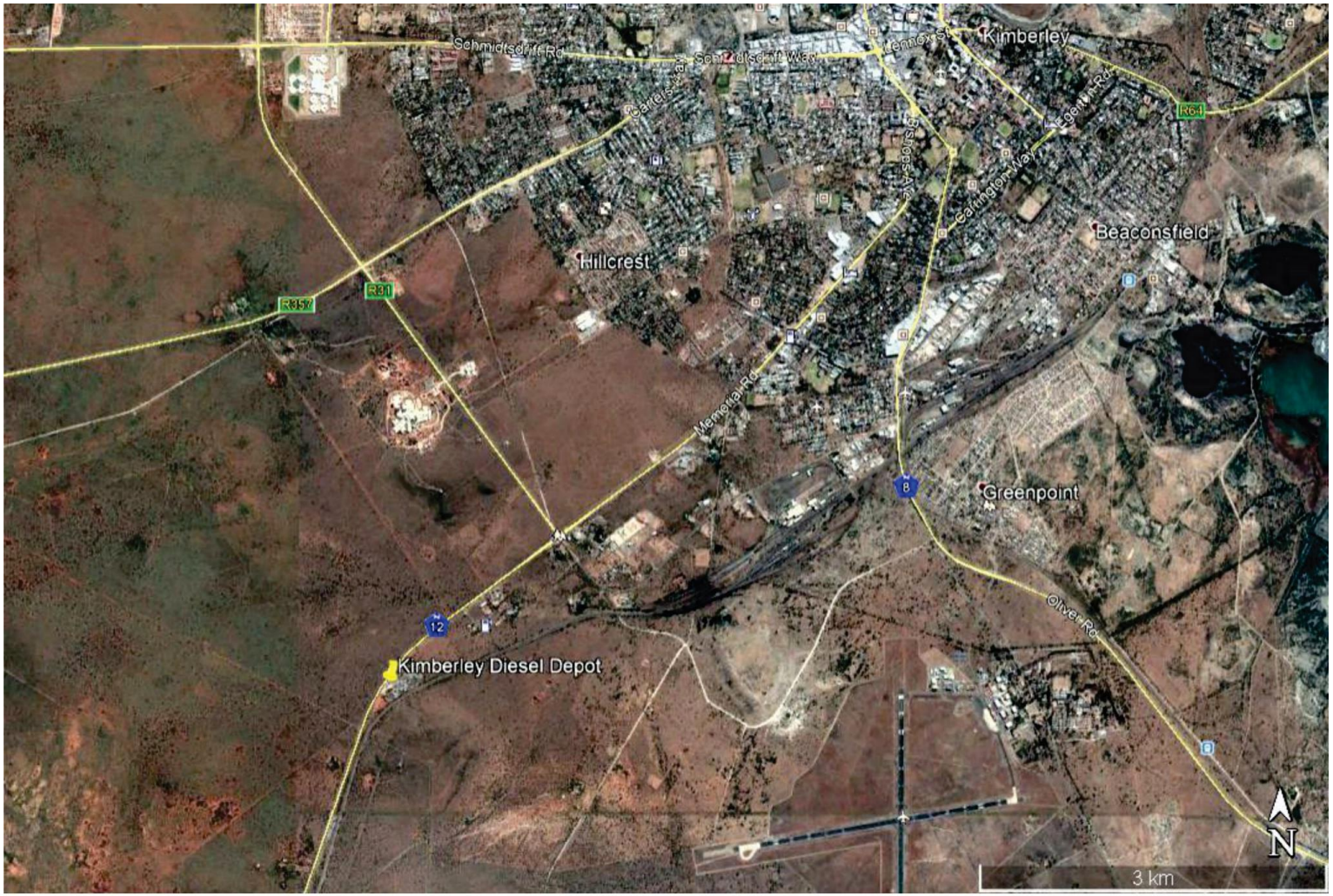


Figure 2. Aerial view of the site in relation to position of Kimberley.

Figure 3. Aerial view and layout of the proposed study area.

Figure 4. General view of the terrain, looking south (above) and north (below).

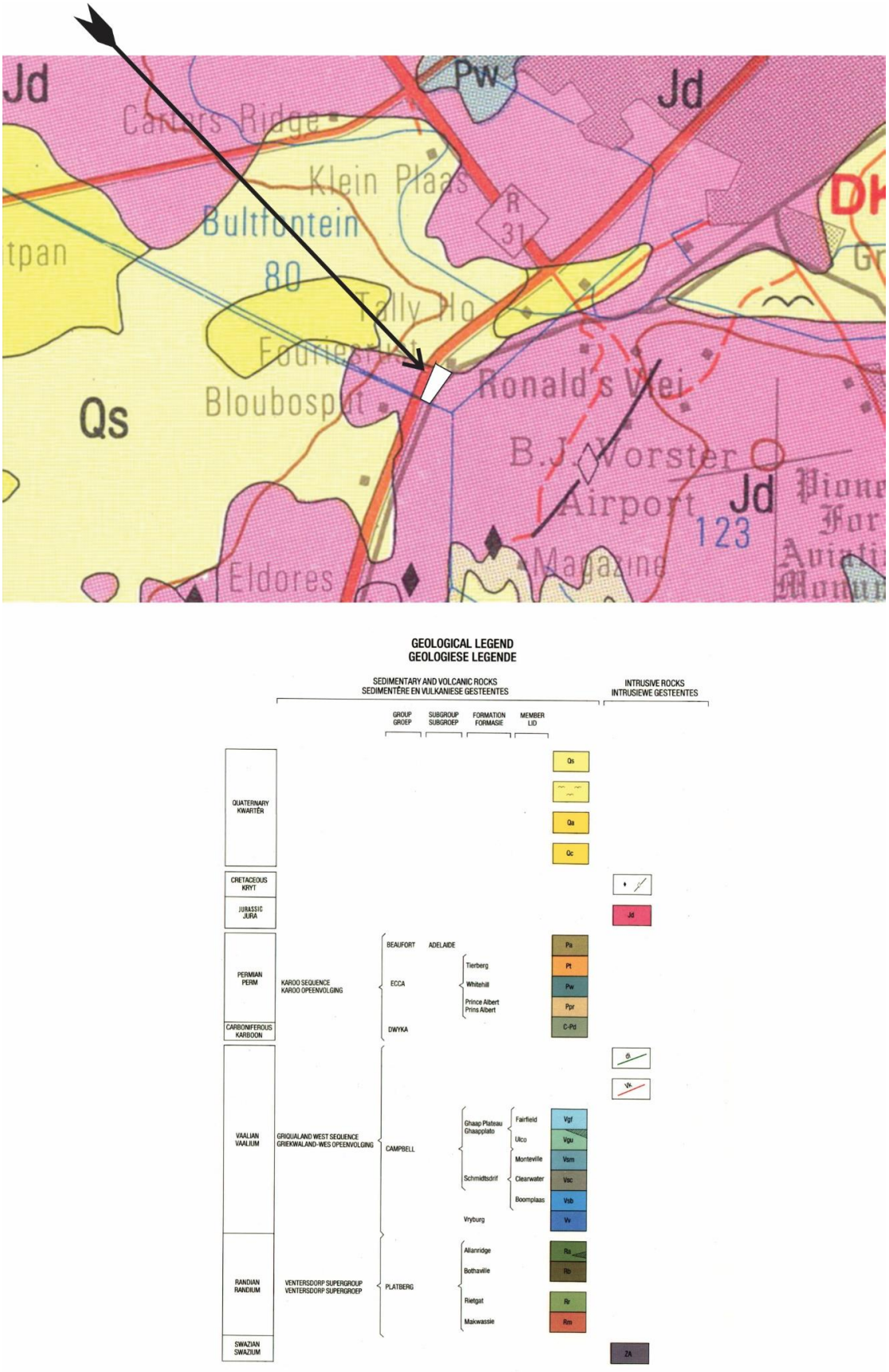
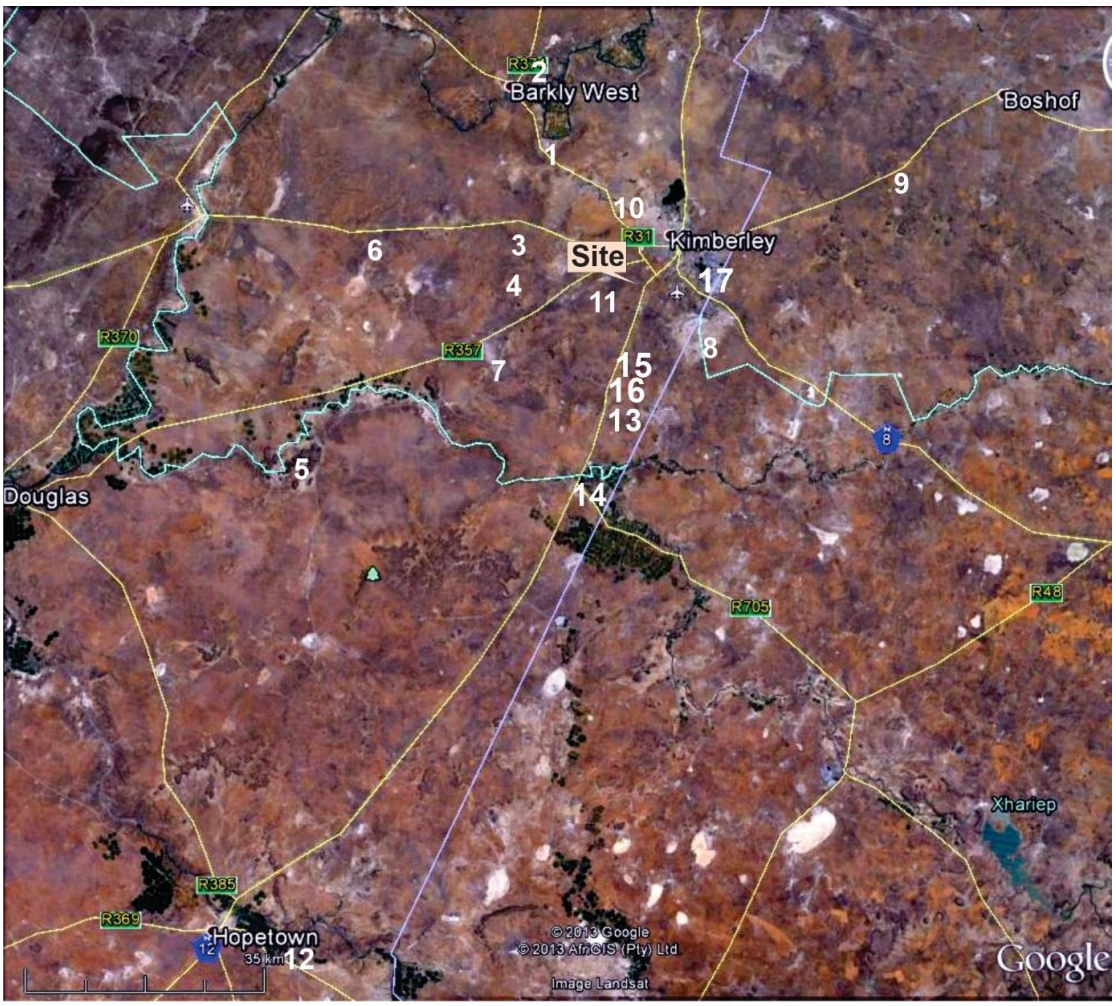


Figure 5. According to the 1:250 000 scale geological map of the area (2824 Kimberley) the affected area lies within an outcrop area of Jurassic-age dolerites (Karoo Dolerite Suite, *Jd*).

Figure 6. General view of undisturbed landscape immediately south of the study area. The affected area lies within an outcrop area of weather-resistant dolerites capped by Quaternary-age surface calcretes and aeolian sand (below).



1. Pniel, Nooitgedacht & Powers Site - ESA, MSA and LSA
2. Canteen Koppie - ESA
3. Rooidam - ESA
4. Biesiesput - MSA
5. Driekopseiland - Glacial striations, Rock engravings
6. Doornlaagte - ESA
7. Kareevloer - ESA, MSA
8. Alexandersfontein - 'palaeo-lake'
9. Liebensraum - ESA
10. Wildebeestkuil - Rock engravings
11. Witpan - Rock engravings
12. Orange River Station, Blockhouse & Concentration Camp - Anglo-Boer War
13. Battle of Magersfontein - Anglo-Boer War
14. Battle of Modder River - Anglo-Boer War
15. Graveyard - Anglo-Boer War
16. Fortifications - Anglo-Boer War
17. Beaconsfield historical landscape

Figure 7. Heritage sites in the vicinity of the study area.

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Determination of the need to conduct an Ecological Assessment for the expansion of a diesel depot on Portion 76 of the Farm Bultfontein 80 in Kimberley, Northern Cape Province.

The existing development being operated by DG Carriers consists of a small diesel depot with parking area. The development is in the process of expansion and will aim to increase the above-ground diesel storage and in so doing will be required to comply with the applicable legislation associated with the National Environmental Management Act (NEMA) (Act 107 of 1998). As a part of this the development needs to assess the impacts that will result on the on-site and surrounding ecosystem including any vegetation, fauna or water resource. The existing development is situated to the south of the city of Kimberley and is adjacent to the N12 National Road and has an approximate extent of 0.5 hectares. The proposed expansion will form part of the existing facilities and will not require the clearing of any additional vegetation or land. The site also forms part of an existing light industrial complex and natural areas has already been cleared of vegetation. However, should any patches or remnants of the natural vegetation remain they may potentially consist of sensitive elements or harbour conservation significant species. Furthermore, the presence of any watercourses or wetlands on the site also has relevance to the need for the development to apply for the required authorisations from the Department of Water and Sanitation (DWS).

The aim of this investigation was therefore to determine if any natural vegetation remains on the site which may be regarded as having a significant conservation value or sensitive species. Secondly this investigation will also address the occurrence of wetlands or watercourses on the site and immediate surroundings.

The footprint of the existing diesel depot including the proposed expansion is approximately 0.5 hectares in extent and forms part of an existing light industrial complex. The site has therefore already been cleared of the natural vegetation and the ecological functioning of the site has been transformed. The soil surface has also been altered by compaction, concrete slabs and diesel storage tanks. However, patches of remnant

vegetation may still be present, the surroundings is still dominated by natural vegetation and water resources such as drainage lines and wetlands may also be present in the surroundings.

Figure 1: Panorama of the site which clearly indicates the absence of vegetation with concrete and existing diesel storage tanks. Trees visible in the background does not form part of the site and is situated outside the property boundary.

According to Mucina & Rutherford (2006) the natural vegetation type in this area consists of Kimberley Thornveld (Svk 4). This vegetation type is listed as being of Least Concern (LC) under the National List of Threatened Ecosystems (Notice 1477 of 2009) (National Environmental Management Biodiversity Act, 2004). This is mostly due to it being widespread, with moderate species diversity, relatively uniform and not currently subjected to any pronounced development pressures. As a result it is not normally considered to have a high conservation value, however, elements of conservation importance may still occur.

The Northern Cape Critical Biodiversity Areas (2016) has recently been published and has identified areas which are essential to meeting conservation targets for specific vegetation types, i.e. Critical Biodiversity Areas (CBA). However, the site is listed as being an Other Natural Area (ONA) and also confirms that the vegetation type is not usually considered to be of high conservation importance.

As has been indicated, the natural vegetation on the site has already been cleared by the existing facilities. However, a survey of the site, perimeter and surroundings were conducted in order to ascertain if any vegetation remains and also to identify any likely aspects of importance.

Vegetation is almost completely absent from the site and is restricted to pioneer herbs and weeds along the western boundary and a few small trees along the border fence. Pioneer herbs occur where vegetation has been cleared but topsoil is still present and include species such as *Cotula microglossa, Senecio consanguineus, Sisymbrium sp.* and *Helichrysum argyrosphaerum*. A few pioneer grasses are also present and include *Eragrostis lehmanniana* and *Enneapogon cenchroides*. A few exotic weeds have also become established and include *Argemone ochroleuca, Emex australis* and *Schkuhria pinata*. Of these, *A. ochroleuca* is also a problematic weed and should be removed where it establishes on the site. The road reserve to the west of the site is dominated by planted grasses, *Cenchrus ciliaris* and a few shrubs and small trees occur along the border fence which includes *Vachelia erioloba, Searsia lancea, S. ciliata* and *Grewia flava*. At the entrance of the diesel depot there is also a large specimen of Umbrella Thorn (*Vachellia tortillis*) and a few small specimens of the Camel Thorn (*Vachellia erioloba*). These should all be retained on the site and should not be damaged or removed. Furthermore, *V. erioloba* is a protected tree species and a permit is required for the removal of any specimens on the site. Though it is highly unlikely that the few specimens on and around the site will be affected by the proposed expansion, care should still be taken that they remain intact.

As indicated, the exotic weed, *Argemone ochroleuca* is present in patches around the western perimeter of the site. It is also listed as a category 1 weed according to the Conservation of Agricultural Resources Act, No. 43 of 1983 and National Environmental Management: Biodiversity Act, No. 10 of 2004 and as such requires removal from the property. Management of the diesel depot should also include removal and eradication where any other exotic weeds become established.

Figure 2: The exotic weed, *Argemone ochroleuca* has become established along the western perimeter of the site and should be removed and disposed of.

Figure 3: The large *Vachellia tortillis* tree near the entrance should remain unaffected though should still be taken that it is nor damaged by the proposed expansion.

Figure 4: A few small specimens of protected *Vachellia erioloba* trees occur near the entrance of the diesel depot and care should be taken that they remain intact.

The site, as well as the surrounding area, was also surveyed for the presence of any watercourses or wetlands and it is quite clear that no such system is present and the topography also does not support the presence of any such system. The nearest wetland area consists of a pan system approximately 3 km to the east of the site. Due to the large distance from the site as well as the flat topography it will in no way be affected by the development. The wetland also falls outside the regulated area as stipulated: a 500 m radius from the delineated boundary (extent) of any wetland or pan [General Authorisation regulations for section 21(c) or (i) water uses (Notice 509 of 2016)]. Nonetheless the development should still implement an adequate storm water system which should ensure that all storm water should be contained on the site and clean and dirty storm water kept separate. From the site survey it was evident that such a system has already been implemented.

Additional spatial data were also consulted to determine if the site does not contain any unforeseen sensitive elements and this included the following:

- Government of South Africa. 2008. National Protected Area Expansion Strategy for South Africa 2008: Priorities for expanding the protected area network for ecological sustainability and climate change adaptation. Government of South Africa, Pretoria.
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and South African National Biodiversity Institute (SANBI): Pretoria, South Africa. Report Number: CSIR report number CSIR/NRE/ECOS/IR/2018/0001/A.

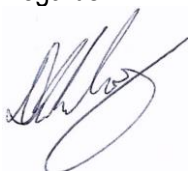
From this data it was also clear that the conservation value of the site and surroundings is relatively low and that no elements of high sensitivity occurs on and around the site.

In conclusion, the site proposed for the expansion of the above-ground diesel tanks has already been transformed and cleared of natural vegetation and no remnants or patches of natural vegetation remain. Pioneer herbs and weeds has become established along the perimeter but are not considered to represent natural vegetation. Furthermore, no watercourses or wetlands occur on or near the site which could be affected by the development or occur within the regulated area as governed by legislation. As a result, it will not be feasible to conduct an ecological assessment for the proposed expansion of the development. However, recommendations which the development should still take into consideration include:

- The problematic weed, *Argemone ochroleuca,* is present in patches around the western perimeter of the site. It is also listed as a category 1 weed according to the Conservation of Agricultural Resources Act, No. 43 of 1983 and National Environmental Management: Biodiversity Act, No. 10 of 2004 and as such requires removal from the property. Management of the diesel depot should also include removal and eradication where any other exotic weeds become established.
- The large specimen of Umbrella Thorn (*Vachellia tortillis*) and the few small specimens of the protected Camel Thorn (*Vachellia erioloba*) at the entrance and western fenceline of the development should be retained intact and care should be taken that they are not damaged by the development or proposed expansion.
- Owing to the nature of the development all storm water should be contained on the site and clean and dirty storm water kept separate. The current storm water system should be maintained and adequate capacity should be ensured with regards to the proposed expansion.

Should any further enquiries or clarity be required please do not hesitate to contact me.

Regards



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APPENDIX: F

Impact Assessment

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IMPACT ASSESSMENT:

INSTALLATION OF ABOVE-GROUND STORAGE TANKS FOR THE STORAGE OF DIESEL ON PORTION 76 OF THE FARM BULTFONTEIN 80, KIMBERLEY, NORTHERN CAPE

August 2020

Applicant:

DG Carriers

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1. Assessment methodology

The environmental significance assessment methodology is based on the following determination: Environmental Significance = Overall Consequence x Overall Likelihood.

1.1 Determination of Consequence

Consequence analysis is a mixture of quantitative and qualitative information and the outcome can be positive or negative. Several factors can be used to determine consequence. For the purpose of determining the environmental significance in terms of consequence, the following factors were chosen: Severity/Intensity, Duration and Extent/Spatial Scale. Each factor is assigned a rating of 1 to 5, as described in the tables below.

Determination of Severity

Severity relates to the nature of the event, aspect or impact to the environment and describes how severe the aspects impact on the biophysical and socio-economic environment Table 1).

Table 1: Rating of severity

Type of criteria	Rating				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / Non-harmful	Small / Potentially harmful	Significant / Harmful	Great / Very harmful	Disastrous Extremely harmful
Social/ Community response	Acceptable / I&AP satisfied	Slightly tolerable / Possible objections	Intolerable/ Sporadic complaints	Unacceptable / Widespread complaints	Totally unacceptable / Possible legal action
Irreversibility	Very low cost to mitigate/ High potential to mitigate impacts to level of insignificance / Easily reversible	Low cost to mitigate	Substantial cost to mitigate / Potential to mitigate impacts / Potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate / Little or no mechanism to mitigate impact Irreversible
Biophysical (Air quality, water quantity and quality, waste production, fauna and flora)	Insignificant change / deterioration or disturbance	Moderate change / deterioration or disturbance	Significant change / deterioration or disturbance	Very significant change / deterioration or disturbance	Disastrous change / deterioration or disturbance

Determination of Duration

Duration refers to the amount of time that the environment will be affected by the event, risk or impact, if no intervention e.g. remedial action takes place (Table 2).

Table 2: Rating of Duration

Rating	Description
1: Low	Almost never / almost impossible
2: Low-Medium	Very seldom / highly unlikely
3: Medium	Infrequent / unlikely / seldom
4: Medium-High	Often / regularly / likely / possible
5: High	Daily / highly likely / definitely

Determination of Extent/Spatial Scale

Extent refer to the spatial influence of an impact be local (extending only as far as the activity, or will be limited to the site and its immediate surroundings), regional (will have an impact on the region), national (will have an impact on a national scale) or international (impact across international borders) (Table 3).

Table 3: Rating of Extent / Spatial Scale

Rating	Description
1: Low	Immediate, fully contained area
2: Low-Medium	Surrounding area
3: Medium	Within Business Unit area of responsibility
4: Medium-High	Within Mining Boundary area
5: High	Regional, National, International

Determination of Overall Consequence

Overall consequence is determined by adding the factors determined above and summarised below, and then dividing the sum by 4 (Table 4).

Table 4: Example of calculating Overall Consequence

Consequence	Rating
Severity	Example 4
Duration	Example 2
Extent	Example 4
SUBTOTAL	Example 10
TOTAL CONSEQUENCE:(Subtotal divided by 3)	Example 3.3

Likelihood

The determination of likelihood is a combination of Frequency and Probability. Each factor is assigned a rating of 1 to 5, as described and in Tables 5 and 6.

Determination of Frequency

Frequency refers to how often the specific activity, related to the event, aspect or impact, is undertaken (Table 5).

Table 5: Rating of frequency

Rating	Description
1: Low	Once a year or once / more during operation / LOM
2: Low-Medium	Once / more in 6 Months
3: Medium	Once / more a Month
4: Medium-High	Once / more a Week
5: High	Daily

Determination of Probability

Probability refers to how often the activity/event or aspect has an impact on the environment (Table 6).

Table 6: Rating of probability

Rating	Description
1: Low	Almost never / almost impossible
2: Low-Medium	Very seldom / highly unlikely
3: Medium	Infrequent / unlikely / seldom
4: Medium-High	Often / regularly / likely / possible
5: High	Daily / highly likely / definitely

Overall Likelihood

Overall likelihood is calculated by adding the factors determined above and summarised below, and then dividing the sum by 2 (Table 7).

Table 7: Example of calculating the overall likelihood

Consequence	Rating
Frequency	Example 4
Probability	Example 2
SUBTOTAL	Example 6
TOTAL LIKELIHOOD (Subtotal divided by 2)	Example 3

Determination of Overall Environmental Significance

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will then fall into a range of LOW, LOW-MEDIUM, MEDIUM, MEDIUM, MEDIUM-HIGH or HIGH, as shown in the table below (Table 8).

Table 8: Determination of overall environmental significance

Significance or Risk	Low	Low-Moderate	Moderate	Moderate-High	High
Overall Consequence X Overall Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25

Qualitative description or magnitude of Environmental Significance

This description is qualitative and is an indication of the nature or magnitude of the Environmental Significance. It also guides the prioritisations and decision making process associated with this event, aspect or impact (Table 9).

Table 9: Description of the environmental significance and the related action required.

Significance	Low	Low-Moderate	Moderate	Moderate-High	High
Impact Magnitude	Impact is of very low order and therefore likely to have very little real effect. Acceptable.	Impact is of low order and therefore likely to have little real effect. Acceptable.	Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to the company	Impact is real and substantial in relation to other impacts. Pose a risk to the company. Unacceptable	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action Required	Maintain current management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve	Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible.	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives.

Impact Assessment:

1. Geology and soil

The geology of the region has been described by Bosch (1993). The area in question is underlain by sediments of widely different geological ages. From oldest to youngest, the geology in and around the affected area is made up of Permian Ecca shales (Whitehall Formations, *Pw*), Jurassic dolerite intrusions (*Jd,)* Karoo Dolerite Suite), Quaternary calcretes, surface limestones (Qc) and aeolian sands (Qs) (Kalahari Group).The proposed site is covered by degraded topsoils underlain by dolerite bedrock as seen in the 1:250 000 scale geological map 2924 Koffiefontein.

It is not expected that the proposed project will have an impact on the geology and soil of the area as the only excavations will include foundations for bunded areas in which the storage tanks will be located. These foundations are already in place. There will be some impacts on soil, though the scale is minimal, as a result of the construction and operational phase of the activity:

- Loss of topsoil during construction,
- A change in soil characteristics as a result of the disturbance of the soil,
- Contamination of soil due to spillage and/or leakage of oil.

Alternatives	Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Site Alternative								
Impact on Geology	2	2	2	2	2	2	2	4
MITIGATED	1	2	2	1.7	2	2	2	3.4
Soil erosion	2	3	3	2.7	3	2	2	6.75
MITIGATED	2	2	2	2	2	2	2	4
Soil Compaction	2	3	3	2.7	3	2	2.5	6.75
MITIGATED	2	2	2	2	2	2	2	4
Soil Pollution	2	3	3	2.7	3	2	2.5	5.4
MITIGATED	2	2	2	2	2	2	2	4

It was determined from the impact assessment that the impact without mitigation will be Low-Moderate. There will be a definite loss in topsoil due to the construction of the bunded areas. However, the amount of topsoil to be lost is minimal and the location of the site is in a light industrial complex where the soil is already degraded. If mitigation measures are implemented and topsoil is stored correctly and not used during construction the impact will be Low. The impact on geology will be Low. With mitigation measures it will be made even lower.

Proposed Mitigation:

- Topsoil will be removed before construction and stockpiled appropriately and in such a manner to prevent any loss thereof. Topsoil will not be used for any construction purposes and will be used at an alternative location where it can be utilised effectively.

- Topsoil will then be used during the rehabilitation and construction of a storm water system for the site.
- Construction equipment will be maintained and drip trays will be used to prevent spillages of petrochemical products which may cause contamination of soil. Any hazardous substances on the site will be stored in a bunded area which consists of an impermeable floor with walls which will have the capacity to contain 110% of the volume of the substance stored therein.

2. Climate

The local climate around Kimberley is essentially a continental one - the weather provides hot wet summers (December to February) and mild dry winters (June to August). The infrequent summer rains tend to take the form of occasional severe thunderstorms rather than prolonged soft showers. It is not unusual for winter night-time temperatures to drop below freezing.

It is not expected that the proposed installation of above-ground storage tanks will have any impact on the climate in the area.

3. Land use

The proposed site is currently located on a farm portion that is host to several other industrial activities and businesses. The zoning of the land is vacant / unspecified but is used by several businesses that can be classified as light industrial. The proposed site is in the centre of the farm portion that is already transformed.

It is not expected that the proposed installation of above-ground storage tanks will have any significant impact on the land use in the area due to the nature and size of the proposed activity. Potential impacts on the land use of the site:

- The land use and characteristics of the land will change from being vacant/unspecified to an area containing buildings and storage tanks.

It must be noted however that similar activities are already taking place on the site and which the project is located.

Alternatives	Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Site Alternative								
Impact on Land use	3	3	3	3	3	3	3	9
MITIGATED	2	2	2	2	2	2	2	4

Proposed mitigation:

- The area should be kept clean of littering and other pollutants during construction and operation phase to minimise littering on the surrounding environment.
- Storage tanks should be constructed in a manner in which it is in line with the surrounding environment and should not cause unnecessary obstruction. Buildings, and the site, should also be maintained during operation as to not have a negative aesthetic impact.

4. Plant and Animal life

According to Mucina & Rutherford (2006) the natural vegetation type in this area consists of Kimberley Thornveld (Svk 4). This vegetation type is listed as being of Least Concern (LC) under the National List of Threatened Ecosystems (Notice 1477 of 2009) (National Environmental Management Biodiversity Act, 2004). This is mostly due to it being widespread, with moderate species diversity, relatively uniform and not currently subjected to any pronounced development pressures. As a result it is not normally considered to have a high conservation value, however, elements of conservation importance may still occur

The Northern Cape Critical Biodiversity Areas (2016) has recently been published and has identified areas which are essential to meeting conservation targets for specific vegetation types, i.e. Critical Biodiversity Areas (CBA). However, the site is listed as being an Other Natural Area (ONA) and also confirms that the vegetation type is not usually considered to be of high conservation importance.

Vegetation is almost completely absent from the site and is restricted to pioneer herbs and weeds along the western boundary and a few small trees along the border fence. Pioneer herbs occur where vegetation has been cleared but topsoil is still present and include species such as *Cotula microglossa, Senecio consanguineus, Sisymbrium sp.* and *Helichrysum argyrosphaerum*. A few pioneer grasses are also present and include *Eragrostis lehmanniana* and *Enneapogon cenchroides*. A few exotic weeds have also become established and include *Argemone ochroleuca, Emex australis* and *Schkuhria pinata*. Of these, *A. ochroleuca* is also a problematic weed and should be removed where it establishes on the site. The road reserve to the west of the site is dominated by planted grasses, *Cenchrus ciliaris* and a few shrubs and small trees occur along the border fence which includes *Vachelia erioloba, Searsia lancea, S. ciliata* and *Grewia flava*. At the entrance of the diesel depot there is also a large specimen of Umbrella Thorn (*Vachellia tortillis*) and a few small specimens of the Camel Thorn (*Vachellia erioloba*). These should all be retained on the site and should not be damaged or removed. Furthermore, *V. erioloba* is a protected tree species and a permit is required for the removal of any specimens on the site. Though it is highly unlikely that the few specimens on and around the site will be affected by the proposed expansion, care should still be taken that they remain intact. The site does not form part of an Important Bird Area (IBA) or a Strategic Water Source Area (SWSA). There are also no National Protected Areas Expansion Strategy (NPAES) Focus Areas near the site. The area around the site does not contain any formal or informal protected areas.

Please refer to the ecological report found in appendix D.

Potential impacts on vegetation and animals:

- Transformation of the land,
- The growth and spreading of alien plant species,
- Fires made on the site by employees may result in the loss of vegetation of the surrounding environment,
- Destruction of habitat and loss of animal life.

Impacts	Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Site Alternative								
Mortality of fauna and flora	3	4	3	3.3	4	3	3.5	11.55

MITIGATED	2	3	2	2.3	3	3	3	6.9
Invasion of alien species	2	3	2	2.3	3	3	3	6.9
MITIGATED	1	1	1	1	2	2	2	2
Habitat fragmentation	2	3	2	2.3	3	3	3	6.9
MITIGATED	2	1	2	1.7	3	2	2.5	4.25

The impact on plant and animal life due to the proposed development will be minimal. This is because the proposed site has already been transformed and is located within an industrial node. Indigenous vegetation has already been removed in the centre of the site with only some vegetation still present on the eastern and western edges of the farm portion. These locations are situated more than 200m from the proposed site location. The impact for the preferred alternative (portion 76 of farm Bufontein 80) is therefore regarded as low.

The impact of electrical supply and water use was not assessed as both will have no impact on the plant and animal life for the reasons given above.

Proposed mitigation:

- No animals will be harmed and/or killed on the site. If any animals are encountered they will be relocated from the site.
- No endangered or protected plant species (if any) will be harmed and/or removed on the site. If any such plants are encountered they will be transplanted from the site to areas which will not be disturbed.
- Vegetation will not be removed from areas where construction will not occur (if any).
- Open fires will not be permitted on the site.
- The problematic weed, Argemone ochroleuca, is present in patches around the western perimeter of the site. It is also listed as a category 1 weed according to the Conservation of Agricultural Resources Act, No. 43 of 1983 and National Environmental Management: Biodiversity Act, No. 10 of 2004 and as such requires removal from the property. Management of the diesel depot should also include removal and eradication where any other exotic weeds become established.
- The large specimen of Umbrella Thorn (Vachellia tortillis) and the few small specimens of the protected Camel Thorn (Vachellia erioloba) at the entrance and western fenceline of the development should be retained intact and care should be taken that they are not damaged by the development or proposed expansion.
- Owing to the nature of the development all storm water should be contained on the site and clean and dirty storm water kept separate. The current storm water system should be maintained and adequate capacity should be ensured with regards to the proposed expansion.

5. Surface Water

The nearest significant watercourse is a small stream which is located approximately 2.4km to the south-east of the site. According to the National Freshwater Ecosystems Priority Areas (NFEPA) there are also no wetlands, rivers or other water bodies near the site.

It is therefore not anticipated that the proposed project will have a significant impact on surface water features so long as the proposed mitigation measures are implemented and maintained.

Potential impacts which might occur on surface water:

- Storm water may become contaminated because of spillages and mismanagement of petrochemical substances during construction and operation phases.
- The proposed development may affect the quantity of water draining to the surface water resources due to the buildings and structures acting as obstructions for the flow of water.

Impacts	Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Site Alternative								
Pollution of surface water resources	3	2	2	2.3	3	3	3	6.9
MITIGATED	2	1	2	1.7	2	2	2	3.4
Decrease in surface water quantity	2	3	3	2.7	3	2	2.5	6.8
MITIGATED	2	2	2	2	2	2	2	4

The proposed site does not contain any steep slopes and the topography is mostly flat. During the construction phase of the proposed project there might be some potential impacts on surface water as drainage of water might be blocked by temporary trenches and/or berms. Furthermore, there will be machinery and vehicles on site which may result in leakages of petrochemical substances which may contaminate storm water.

During the operational phase the infrastructure will be completed and will result in storm water being blocked (bunded area will be complete) and not being allowed to drain naturally into the surrounding environment. The significance of the impacts on surface water will be Low-Moderate if no mitigation measures are implemented and Low with the implementation of mitigation measures.

<u>Proposed mitigation:</u>

- An adequate storm water management system will be implemented during construction to accommodate runoff during rain events as well as to divert the water around the development to the surrounding drainage basins. Storm water management systems will be maintained, repaired and cleaned regularly to ensure its functionality and to prevent impacts from occurring on downstream surface water resources.
- Any hazardous substances permanently stored on site will be stored in a bunded area with a capacity to contain 110% of the volume of the substance. The bunded area will have a controlled outlet from which rain water collected therein can be drained and managed as hazardous waste.
- Spillages of hazardous substances will be cleaned by removing the spill and contaminated soil and disposing of it as hazardous waste.

- The site will be kept clean and tidy to prevent general waste and littering from occurring in the surrounding surface water resources.
- Any incidents on surface water resources during construction will be reported to the relevant authorities within 24 hours of the incident.

6. Groundwater

It should be noted that the applicant will not use groundwater during construction or during the operational phase of the activity. In the event that groundwater will be used at any stage of the project a Water Use License should be applied for with DWS and the water use should be authorised by the authority before commencement thereof. Potential impacts on groundwater:

- Contamination as a result of spillages of hazardous substances.
- Deep excavation on the site may extend beyond the water table which will result in an impact on groundwater. However, it is not expected that this impact will occur as the proposed area is not known for very shallow aquifers and the foundations for the nudned areas will be shallow.

Impacts	Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Site Alternative								
Pollution of Groundwater	2	4	3	3	3	3	3	9
MITIGATED	2	3	2	2.3	2	2	2	4.6

The potential impacts that might occur will occur as a result of contamination of groundwater from spillages and mismanagement of hydrocarbons and potentially hazardous substances. The proposed project will impact infiltration of water and thus the recharge of groundwater as the concrete structures and infrastructure will result in a greater runoff velocity of surface water from the site and less time for water to seep. The footprint of the project is small though and the impact on infiltration rates is expected to be minimal. The significance of the impacts will be Low-Moderate before mitigation and Low with the implementation of mitigation measures.

The use of groundwater is not applicable to this activity as the activity is the storage of dangerous goods and the proposed activity will not utilise water in any means.

Proposed mitigation:

- Spillages of any potentially hazardous substances should be cleaned by removing the spill and the contaminated soil and disposing thereof as hazardous waste.
- Potentially hazardous substances will be stored on an impermeable surface inside a bunded area to prevent seepage of the substance and pollution of the groundwater.

7. Air quality and Noise

As the study area falls outside an urban area on a farm portion on the outskirts of Kimberley that is far from large communities and cities, it is relatively free of air pollution and air quality is relatively good. It is not foreseen that the proposed project will have a significant impact on the air quality and noise in the area due to the following reasons:

- The activity in question which is the storage of dangerous goods (i.e. diesel) will not impact air quality unless its from the trucks visiting the site to fill up. The trucks in question already visit the site for additional reasons.
- The visiting trucks may increase the noise in the local vicinity but again it must be stated that the trucks already visit the site. It must also be noted that other industrial related activities from other businesses occur on site and that similar noises already occurs from said activities.

Alternatives	Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Site Alternative								
Impact on Air Quality	2	2	2	2	2	2	2	4
MITIGATED	1	2	1	1.3	2	2	2	2.6
Impact on Noise	2	2	2	2	2	2	2	2
MITIGATED	1	2	1	2	2	2	2	2.6

The impact on air quality and noise will be low before mitigation and lower after mitigation.

Proposed mitigation:

- Dust suppression should be implemented on the site to reduce emissions of dust from the site.
- Construction activities, especially activities contributing to dust emissions should be avoided during windy conditions.
- Vehicles and equipment will need to be serviced and maintained to reduce emissions to the atmosphere.
- Vehicle movement and speeds at which vehicles travel on the site will be kept to a minimum.
- Waste will not be burned on site and open fires during construction will not be permitted.
- Construction activities contributing to elevated noise levels will be restricted to normal working hours.

8. Archaeological and Cultural Resources

A Phase 1 Heritage Impact Assessment was carried out for the proposed installation of aboveground storage tanks and associated infrastructure for the storage of diesel on Portion 76 of Farm Bultfontein 80 near Kimberley, NC Province. The affected area lies within an outcrop area of dolerite (Karoo Dolerite Suite) surrounded by Quaternary-age surface calcretes and aeolian sand. The terrain has been severely degraded by previous industrial and commercial activities.

Alternatives	Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Site Alternative								
Impact on Heritage Resources	2	2	2	2	2	2	2	4

MITIGATED	1	1	1	1	1	1	1	1
Impact Palaeontolgy	2	2	2	2	2	2	2	4
MITIGATED	1	1	1	1	1	1	1	1

There are no indications of prehistoric structures or rock engravings within the footprint area. There is also no evidence of informal graves or historical structures older than 60 years within the confines of the footprint. The field assessment indicates that the proposed development will primarily affect degraded topsoils underlain by dolerite bedrock, which are not palaeontologically significant. Very little possibility exists that objects of palaeontological significance may be uncovered during the course of excavation activities into possibly *in situ* Quaternary soils overlying the terrain. In accordance with the types and ranges of heritage resources as outlined in the National Heritage Resources Act (No 25 of 1999), there is no aboveground evidence of historical structures or material of cultural significance, archaeological or palaeontological sites within the demarcated area. The site is assigned a heritage rating of General Protection C.

Proposed mitigation:

- If, however, any items of archaeological significance be unearthed a heritage specialist will be contacted to investigate and the SAHRA will be notified.

9. Visual exposure (Aesthetic impact)

The proposed site is on a farm portion on the outskirts of Kimberley that borders the N12. Visibility of the proposed project will be restricted to those on the site itself (Portion 76 of Farm Bulfontein 80) and those driving by on the N12.

- The construction phase of the project will have a negative aesthetic impact on the surrounding land users as it will involve construction activities. This is temporary in nature.

Alternatives	Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Site Alternative								
Impact on aesthetics	2	3	3	2.7	3	2	2.5	6.75
MITIGATED	1	2	2	1.7	3	2	2.5	4.25

The aesthetic impact at the site will be Low-Moderate and can be reduced to a Low impact rating if the correct mitigation and management measures are implemented.

Proposed mitigation:

- Storage tanks and infrastructure should be monitored throughout the project and maintenance (i.e. painting, fixing trimmings) should be done regularly to prevent the site from having a negative aesthetic impact.
- The site should be cleaned of any waste and alien vegetation regularly to minimise the negative visual impact.

10. Demographics and Regional socio-economic structure

According to the Frances Baard integrated Development Plan (IDP) of 2017/18 to 2021/2022, the Frances Baard District Municipality (FBDM) is one of five District Municipalities that make up the Northern Cape. Frances Baard DM shares its northern boundary with the North West Province and its eastern boundary with the Free State province. FBDM comprises of four local municipalities; Dikgatlong, Magareng, Phokwane and Sol Plaatje municipality, which is the most populous as it is the heart of economic 6 activities of the area. The capital city of the Northern Cape, Kimberley, is located less than 500km from Johannesburg and approximately 1,000km from Cape Town.

It is worth noting that 21. 4% of the Northern Cape population lives in Sol Plaatje local municipality. Of the total district population, 90.6% live in urban areas, 5.7% in traditional areas and 3.7% in farm areas. In terms of actual numbers 36 618 of the district population live in non-urban areas. The district population is young with 62% of the population aged 35 years or younger. Those between the ages of 36- and 65-years account for 30% and only 7% of the population is of retirement age, i.e. 66 years and older. The table below gives a broader view of the age distribution.

Unemployment within Frances Baard District Municipality is high, with Magareng being over 40%. The high unemployment levels are due to low levels of education. Over 80% of the population of each local municipality either has no education or have less than Grade 12. Sol Plaatje Municipality has the urban node of Kimberley located within it. It covers an area of 3,145km2 and has a population of 248,041 people (2011). The population density of the municipality is 79 people/km2. About 66.2% of the population is economically active and 31.9% is unemployed. The number of households with no income accounts for 11.7%. The main economic activities in Sol Plaatje are mining and farming. Farming is generally game (sheep and cattle farming) and crops (Lucerne, grapes, cotton and soybeans)

The construction and operation of the proposed development may generate new job opportunities for local residents of Sol Plaatje Municipality. The development will have a positive impact on the socio-economics of the area. Direct and indirect jobs will be created during the construction phase. These jobs will include the building of the structures and infrastructure as well as additional staff to work and maintain the tanks and pump stations...

CONCLUSION AND MOTIVATION FOR PROPOSED ALTERNATIVES

The proposed installation of above ground storage tanks for the storage of dangerous goods (i.e. diesel) on the portion 76 of the farm Bultfontein 80, Kimberley, Northern Cape

The proposed activity involves the installation of above ground storage tanks for the storage of dangerous goods, in this case diesel. The client intends to have a total capacity of approximately 207 m^3. The total size of development will be approximately 100 m^2. The development will not require the installation of services such as electricity and water as water will not be used for the project and electricity is already installed. In this assessment alternatives were identified and assessed. The preferred alternatives were chosen based on certain factors:

- All variables like current property owners, geology, surface and groundwater, air quality, plant & animal life, archaeological and cultural significance and visual exposure were taken into account during the assessment process.
- Proposed development will create job opportunities during the construction period with future jobs becoming available once the project is completed.
- Development will have a positive contribution towards the socio-economic and economic spheres of the local and district Municipalities.

Impacts associated with the proposed project as indicated in the Impact Assessment:

The likelihood of the expected impacts occurring will be small and limited if all the recommended mitigation measures are implemented throughout all the phases of the project.

Impacts associated with the Construction Phase will be temporary in nature and local if all mitigation measures are implemented. If storm water is diverted around the site and all potentially hazardous substances are managed appropriately, the likelihood of the potential impacts occurring will be low.

In conclusion, if all the recommended measures are implemented, the significance of the impacts expected to be associated with the proposed project will be low.

Discussion on the 'no-go' alternatives:

No environmental impact will occur if the no-go alternative is decided on. The opportunity to create employment opportunities and make a positive contribution to the socio-economic situation of the area will be lost.

After consideration of the Impact Assessment the following conclusions are drawn:

Proposed site:
The vegetation on the site is of low ecological value (vegetation has already been removed) where the proposed activity will take place. Should all the mitigation factors be implemented the environmental impact will be low.

- The site for the storage tanks has already been bunded.
- All potentially hazardous substances must be managed appropriately, and staff must be trained and made aware on the impotence of handling and transporting dangerous goods.

Based on the above findings the proposed installation of above ground storage tanks for the storage of dangerous goods on portion 76 of the Farm Bultfontein 80 located south of Kimberley in the Northern Cape should be considered.

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ENVIRONMENTAL MANAGEMENT PLAN:

INSTALLATION OF ABOVE-GROUND STORAGE TANKS FOR THE STORAGE OF DIESEL ON PORTION 76 OF THE FARM BULTFONTEIN 80, KIMBERLEY, NORTHERNCAPE

Coordinates	Latitude:	29°37'26.24''	South
	Longitude:	24°5'45.80''	East

August 2020

Applicant:

DG Carriers

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1 Objectives of the Environmental Management Plan (EMP)

The Environmental Management Plan is intended to provide environmental specifications for the proposed development and to put measures in place to mitigate and manage potential environmental impacts arising from the phases of the proposed installation of above-ground storage tanks for the storage of diesel on Portion 76 of the Farm Bultfontein 80, Kimberley, Northern Cape.

2 Responsibility of contractors during planning and construction phase

- Protect the environment on the site planned for construction as well as the surrounding properties.
- Ensure controlled access to the site to prevent degradation.
- Be held responsible for the implementation of the EMPr.
- Be held responsible to have the EMPr available on site at all times.
- Be held responsible for compliance with all relevant aspects of the EMPr.
- Ensure that all problems identified during environmental audits or inspections during construction, are addressed and rectified as soon as reasonably possible.
- After ceasing of construction activities, an environmental audit should be done before commencing with the operational phase, to determine compliance with the EMPr.

3 Responsibility during operational phase

- Providing a budget for maintenance of infrastructure.
- Maintaining all approved infrastructure in good working order to effectively fulfil its intended purpose to prevent negative environmental impacts.
- Not construct any additional buildings, infrastructure, etc. contrary to the approved RoD, without performing an Environmental Impact Assessment (if required) to evaluate alternatives and identify potential impacts.
- To immediately remedy any factors that contribute to negative environmental impacts.

4 Layout plan

- A copy of the layout plan must be available at the site for scrutiny during construction when required.

5 Demarcating the development area

- The area must be clearly demarcated by means of beacons at its corners, and along its boundaries if there is no visibility between the corner beacons.

6 Protection of Topsoil

It is not foreseen that topsoil will be disturbed for the proposed activity as the diesel storage tanks will be placed in an already constructed bunded area. Should, however, the soil be disturbed then the following mitigation measures apply

- Topsoil must be removed from all areas where physical disturbance of the surface will occur.
- Topsoil must be kept separate and shall not be used for building or maintenance of access roads.

7 Protection of Cultural or Historical Elements

- The South African Heritage Resources Agency must be notified if any elements of cultural or historical importance are found during the construction phase.

8 Protection of Plant and Animal Life

- No open fires are allowed on site.
- No hunting of wild animals on site or surrounding area.
- The collection of fire wood is not allowed on site or surrounding area.
- The problematic weed, Argemone ochroleuca, is present in patches around the western perimeter of the site. It is also listed as a category 1 weed according to the Conservation of Agricultural Resources Act, No. 43 of 1983 and National Environmental Management: Biodiversity Act, No. 10 of 2004 and as such requires removal from the property. Management of the diesel depot should also include removal and eradication where any other exotic weeds become established.
- The large specimen of Umbrella Thorn (Vachellia tortillis) and the few small specimens of the protected Camel Thorn (Vachellia erioloba) at the entrance and western fenceline of the development should be retained intact and care should be taken that they are not damaged by the development or proposed expansion.

9 Establishing access roads on the site

- The existing access roads shall be used as far as practicable.

- Should a portion of the access road be newly constructed the following must be adhered to:
    - The route shall be selected that a minimum number of bushes or trees are felled and existing fence lines shall be followed as far as possible.
    - Steep gradients shall be avoided as far as is practicable.
    - Adequate drainage and erosion protection in the form of cut-off berms or trenches shall be provided where necessary.
- No other routes will be used by vehicles or personnel for the purpose of gaining access to the site.

10 Dust control on the access and haul roads

- Access roads will be maintained.
- The liberation of dust into the surrounding environment shall be effectively controlled if it becomes problematic by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of trucks and other vehicles on the access road must be limited to 35 km/hour to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.
- Due to the fact that the access road is less than 100m in length it is not foreseen that this will pose an issue.

11 Toilet facilities, wastewater, and refuse disposal

- Temporary chemical toilet facilities must be made available on-site during construction.
- Sewage from these toilets should be managed appropriately and not be disposed of on site or the surrounding environment to cause water or other pollution.
- Ablution facilities should be constructed and be used during the operational phase of the project.

12 Handling of waste

- Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., shall be disposed and stored in suitable containers at a collecting point and collected on a regular basis and disposed off at an authorized waste disposal facility in the region. Specific precautions shall be taken to prevent refuse from being dumped on or in the vicinity of the site.
- Spills of any product like paint, oil, cleaning agents etc. should be cleaned up immediately by removing the spillage together with the polluted soil and by disposing it at a recognised facility.

- Suitable covered receptacles shall always be available and conveniently placed for the disposal of waste for general and hazardous waste.
- All used oils, grease or hydraulic fluids, paints, thinners etc. that can not be re-used shall be placed in a hazardous waste container for disposal at a suitable waste disposal facility.
- Best practices in terms of the management of any waste together with the recommended mitigation measures as described in the Basic Assessment Report should be implemented as a minimum requirement.

13 Rehabilitation

Rehabilitation of access roads

- Any gate or fence erected which is not required after the construction phase must be restored to the pre-construction condition.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the soil must be analysed and any deleterious effects on the soil arising from the development must be corrected and the area be seeded with a representative seed mix.

Final Rehabilitation of site

It is not anticipated that the proposed project will undergo decommissioning and / or closure. However, should it be decided to rehabilitate the site in future, the site will be rehabilitated to its original state as far as practicable possible, depending on the end land use to be decided upon at that time. The final rehabilitation of the site will, amongst other, include the following activities:

- All infrastructures, equipment and other items used during the operational period will be removed from the site.
- Scrap metal will be sold to be recycled.
- Waste material of any description, will be removed entirely from the site and disposed of at a recognised landfill facility in the area.
- Waste will not be permitted to be buried or burned on the site.
- Any concrete surface will be removed and compacted areas will be ripped.
- The site will be profiled with acceptable contours and erosion control measures.
- Topsoil will be returned to its original depth over the area.
- Depending on the end-land use, to be decided upon by the land owner at the time, the area will be revegetated with natural occurring vegetation.

14 Inspections and monitoring

- Regular monitoring of all the environmental management measures and components shall be undertaken during the construction phase to verify compliance to the EMPr.
- Ongoing and regular reporting of the progress of implementation of this EMPr will be done.
- Inspections and monitoring shall be carried out on both the implementation of the EMPr and the impact on plant and animal life.
- Visual inspections on erosion and physical pollution shall be carried out on a regular basis.

15 Compliance reporting / submission of information

- An internal environmental officer will be appointed in terms of the specific site. The officer will be responsible to monitor all the environmental management measures and ensure compliance with the EMPr during the Construction Phase.
- It is recommended that a compliance assessment will be undertaken by an independent Environmental Control Officer once during the Construction Phase and once during the Operational Phase to verify compliance with the EMPr and the Record of Decision (should the project be considered for approval).
- Any changes of the lay-out plan or technology will be submitted to the Northern Cape Department of Environment and Nature Conservation ("**DENC**") for approval.
- Reports confirming compliance with various points identified in the EMPr will be kept and made available when requested.
- Any emergency or unforeseen impact will be reported within 12 hours after identification to the DENC telephonically and confirmed in writing.

Table 1: Mitigation measures and monitoring, responsible person(s) and time frames

Activity	Potential Impact	Mitigation	Responsible Person	Performance Indicators	Time Frame
Construction Phase					
Health and Safety: Potential dangerous working conditions, e.g. construction- vehicles and activities, etc.	Potential safety risk to employees	• Equip all employees and/or contractors working on the site with the necessary personal protective equipment, • Implement safety induction, • Training on relevant machinery.	Contractor	No injury incidents to employees or contractors on site.	• With appointment - Training and Induction • During construction phase - PPE
Clearance of site (Vegetation and topsoil)	• Erosion, • Loss of topsoil, • Contamination due to sewage mismanagement, • Invasion of alien plant species.	• Levelling of the site, • Limit construction activities and movement of construction vehicles to the site under construction, • Stockpile topsoil, if any, in an area not prone to erosion for re-use during rehabilitation or for levelling purposes after construction, • Alien vegetation will be monitored and removed, • Spills of petrochemical or other potentially hazardous	Contractor	• No erosion, • No alien vegetation, • No traces of contamination from hazardous substances and sewage, • Minimum soil loss.	During construction phase

Activity	Potential Impact	Mitigation	Responsible Person	Performance Indicators	Time Frame
		substances will be cleaned immediately and the contaminated soil will be removed and disposed of as hazardous waste, • Vehicles and equipment will be serviced regularly to prevent spillages of petrochemical and potential hazardous substances, • Drip trays will be used to prevent spillages, • Temporary toilets will be placed on site to be used by employees. Toilets will be maintained by a contractor, • Topsoil, if any, will not be used for construction purposes.			
Waste management	• Littering, • Aesthetic impact.	• All hazardous waste spills must be cleaned immediately and disposed of appropriately, • Hazardous waste must be stored separately from other waste streams and disposed of at an authorised hazardous	Contractor	No pollution and/or littering	During construction

Activity	Potential Impact	Mitigation	Responsible Person	Performance Indicators	Time Frame
		waste site. Disposal certificates must be kept on site, • Building material and general waste must be disposed of at the authorised landfill site in Bloemfontein and may not be dumped in the veld or on site, • Building rubble can also be used as filling material.			
Storage of potentially hazardous material	• Contamination of soil, ground- and surface water, • Contamination of soil, ground and surface water as a result of spillage of petrochemical substances.	• Potentially hazardous material will be stored in a dedicated area inside a bund wall on an impermeable surface. • Proper maintenance and care must be taken to ensure that bunded areas are maintained and inspected.	Contractor/ Environmental Control Officer	No spillage of potentially hazardous substances	Ongoing
Machine operation and maintenance	• Contamination of soil, ground- and surface water, • Contamination of soil, ground and surface water as	• Trucks visiting the site must be inspected and maintained to prevent the chance of spills. • Those making use of the pumps must be properly trained in the use of the pumps to minimise			

Activity	Potential Impact	Mitigation	Responsible Person	Performance Indicators	Time Frame
	a result of spillage of petrochemical substances.	the chance od spillages.			
EMPr compliance monitoring: Construction Phase	N/A	• Environmental compliance assessment to verify compliance with the EMPr during construction.	Internal environmental officer	• Full compliance with the EMPr and RoD, • Minimum environmental impacts	Once during construction
Operational Phase					
Maintenance and repair of storm water systems	Erosion	• Maintenance, inspection and repair if necessary	Manager / Supervisor	• No erosion • Minimum soil loss	During operational phase
EMPr compliance monitoring: Operational Phase	N/A	• Environmental compliance assessment to verify compliance with the EMPr during operation.	Independent environmental officer	• Full compliance with the EMPr and RoD,	Once during operation
Mangement of or general waste	• Pollution	• General waste must be collected on site and will be disposed of at an authorised landfill site.	Manager / Supervisor	• No pollution.	Once / week or when necessary.

Richard Deneys Williamson

Nationality	: South African
Profession	: Environmental Scientist
Position	: Scientist
Specialisation	: Environmental Management, Geology
Date of birth	: 8 April 1992

AREA OF EXPERTISE

Knowledge and expertise in:

- Environmental Impact Assessments
- Basic Assessment Reports
- Environmental Management Reports
- Mining authorizations
- Waste license applications
- Water use authorization
- Environmental Compliance Audits and Monitoring
- Geological field work
- Data and GIS management

EDUCATION AND PROFESSIONAL STATUS:

B.Sc. Geology	: University of the Free State, 2013
B.Sc. (Hons.) Geology	: University of the Free State, 2014
M.Sc. Environmental Management	: University of the Free State, 2017

EMPLOYMENT

2016 – 2018: Centre for Environmental Management, UFS – Research Assistant
2018 (January to March): Centre for Environmental Management, UFS – Officer/ Course Coordinator
2018 (April) – Present: Eko Environmental – Environmental Scientist

EXPERIENCE:

Scoping and Environmental Impact Assessments
Basic Assessments
Environmental Compliance Auditing and Monitoring
Auditing of Water Use Licenses

PUBLICATIONS:

Projects	:	20
Conference proceedings	:	1
Scientific publications	:	3