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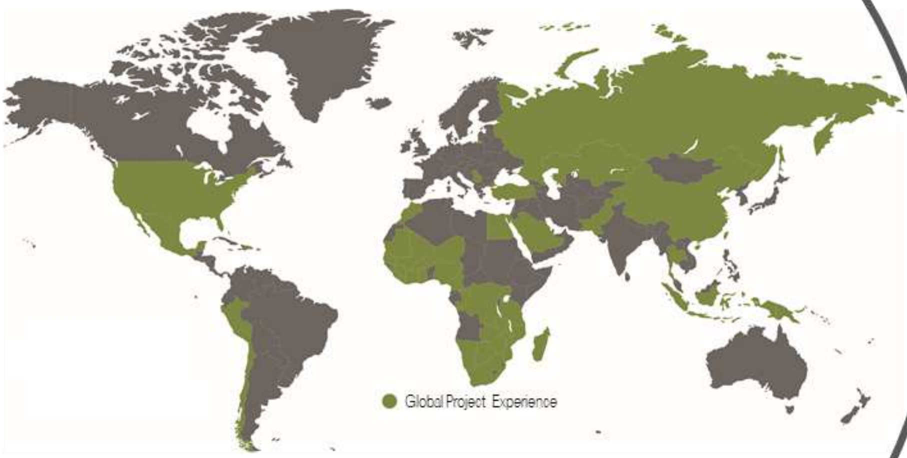

Providing innovative and sustainable solutions throughout the resources sector

Proposed Dalyshope Coal Mining Project, Situated in the Magisterial District of Lephalale, Limpopo Province

Visual Impact Assessment

Prepared for:
Anglo Operations (Pty) Ltd

Project Number:
UCD6170

December 2020

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This document has been prepared by Digby Wells Environmental.

Report Type:	Visual Impact Assessment
Project Name:	Proposed Dalyshope Coal Mining Project, Situated in the Magisterial District of Lephalale, Limpopo Province
Project Code:	UCD6170

Name	Responsibility	Signature	Date
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DETAILS AND DECLARATION OF THE SPECIALIST

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I, Kamogelo Rakale, declare that: –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
  - I declare that there are no circumstances that may compromise my objectivity in performing such work;
  - I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and

- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

November 2020

Signature of the Specialist *Date*

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EXECUTIVE SUMMARY

Anglo Operations (Pty) Ltd (hereinafter Anglo) and Universal Coal Development IV (Pty) Ltd (hereinafter Universal) have partnered together in the development of the proposed Dalyshope Coal Mining Project (the "Dalyshope Project") situated near Lephalale in the Limpopo Province. This project includes a Mining Right Application (MRA) in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) and an application for Environmental Authorisation (EA) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The environmental considerations for this study included a Visual Impact Assessment (VIA) for the project area.

The proposed Dalyshope Project is situated in the Waterberg Coalfield area. This region is largely undeveloped and is characterised by undisturbed Bushveld vegetation, game farming, hunting, tourism and agricultural activities. The proposed Dalyshope Project is located within the Lephalale Local Municipality in the Waterberg District. The nearest towns are Steenbokpan located 20 km south and Stockpoort located 25 km northeast of the project area. The nearest major town is Lephalale situated approximately 70 km southeast of the project area.

The project area and surrounds are relatively flat and the majority of the project area has gentle slopes of less than 1°. It is expected that the topography will only provide minimal screening of the proposed development. The surrounding natural Bushveld vegetation is also expected to provide some screening of the proposed development.

Both a theoretical viewshed model and practical viewshed models were created. The viewshed models show the area from which the proposed Dalyshope Project is potentially visible. The practical viewshed models for the proposed Dalyshope Project takes into account the screening effect of vegetation. The viewshed models are limited to a buffer of 20 km around the proposed opencast pit, dumps, stockpile and infrastructure areas.

The proposed Dalyshope Project will have negative visual impacts on the surrounding receptors. Receptors located within 0 – 5 km to the project will potentially experience high visual exposure, receptors located between 5 – 10 km to the project will potentially experience moderate visual exposure, receptors located between 10 – 15 km to the project will potentially experience low visual exposure and receptors located between 15 – 20 km to the project will potentially experience very low visual exposure.

These impacts can be reduced by implementing various mitigation measures. The most important of these is rehabilitation with emphasis on the open pit being backfilled with material from the overburden stockpiles, the project area being re-contoured and profiled to create a free-draining topography, the topsoil stockpiles being spread over the disturbed areas and these areas vegetated with natural Bushveld vegetation to complete the rehabilitation process.

The success of this rehabilitation will influence the overall long term impact of the project on the topography and visual / aesthetic character of the receiving environment. In the opinion of the specialist, the proposed Dalyshope Project can proceed based on the results of the VIA, provided that the recommended mitigation measures are implemented.

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LIST OF ACRONYMS, ABBREVIATIONS AND DEFINITIONS

3D	Three-dimensional
Anglo	Anglo Operations (Pty) Ltd
CD:NGI	Chief Directorate: National Geo-Spatial Information
the Dalyshope Project	The Proposed Dalyshope Coal Mining Project
DSM	Digital Surface Model
DTM	Digital Terrain Model
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
GIS	Geographic Information System
ha	Hectares
IWUL	Integrated Water Use Licence
km	Kilometres
LDV	Light Duty Vehicle
LoM	Life of Mine
m	Metres

mamsl	Metres above Mean Sea Level
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MRA	Mining Right Application
MTIS	Mineable tonnes in-situ
NEM:BA	National Environmental Management: Biodiversity Act, 004 (Act No. 10 of 2004)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NEM:PAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PCD	Pollution Control Dam
ROM	Run-of-Mine
VAC	Visual Absorption Capacity
VIA	Visual Impact Assessment
Universal	Universal Coal Development IV (Pty) Ltd
WML	Waste Management Licence

Legal Requirement		**Section in Report**
(1)	A specialist report prepared in terms of these Regulations must contain-	
(a)	details of-	
	(i) the specialist who prepared the report; and	ii
	(ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	iii
(b)	a declaration that the specialist is independent in a form as may be specified by the competent authority;	iii
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	1.2
cA	An indication of the quality and age of the base data used for the specialist report;	3
cB	A description of existing impacts on site, cumulative impacts of the proposed development and levels of acceptable change;	5
(d)	The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	3.1

Legal Requirement		Section in Report
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of the equipment and modelling used;	4
(f)	Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure inclusive of a site plan identifying site alternatives;	1.1.2
(g)	an identification of any areas to be avoided, including buffers;	N/A
(h)	a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	1.1.2
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	1.3
(j)	a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	6
(k)	any mitigation measures for inclusion in the EMPr;	9
(l)	any conditions/aspects for inclusion in the environmental authorisation;	12
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	10
(n)	a reasoned opinion (Environmental Impact Statement) -	12
	whether the proposed activity, activities or portions thereof should be authorised; and	12
	if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	9 and 10
(o)	a description of any consultation process that was undertaken during the course of preparing the specialist report;	N/A
(p)	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	11
(q)	any other information requested by the competent authority.	N/A

1 Introduction

Anglo Operations (Pty) Ltd (hereinafter Anglo) and Universal Coal Development IV (Pty) Ltd (hereinafter Universal) have partnered together in the development of the proposed Dalyshope Coal Mining Project (the *"Dalyshope Project"*) situated near Lephalale in the Limpopo Province. This project includes a Mining Right Application (MRA) in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), as well as the following authorisations and licences:

- Environmental Authorisation (EA) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA);
- A Waste Management Licence (WML) application in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA);
- An Integrated Water Use Licence (IWUL) in terms of the National Water Act, 1998 (Act No. 36 of 1998) (NWA); and
- Tree Permit for protected plants that may be impacted upon by the Project in terms of the National Environmental Management: Biodiversity Act, 004 (Act No. 10 of 2004) (NEM:BA).

Universal, on behalf of Anglo, has appointed Digby Wells Environmental (hereinafter Digby Wells) to undertake the aforementioned applications for authorisations and licences required prior to the commencement of activities associated with the proposed Dalyshope Project.

The magnitude of influence that a proposed development will have on the surrounding environment in terms of its visual aspects is assessed through a Visual Impact Assessment (VIA). This specialist VIA Report has been compiled in compliance with the Environmental Impact Assessment (EIA) Regulations, 2014 (GN R982 of 04 December 2014) (as amended) promulgated under NEMA in terms of the Scoping and EIA process.

1.1 Project Description

Anglo is the holder of two Prospecting Rights [Ref. Nos. LP 30/5/1/1/2/10648 PR (as renewed) and LP 30/5/1/2/2/10649 PR (as renewed)] as issued by the Department of Mineral Resources and Energy (DMRE) to prospect for coal.

Anglo proposes to develop a coal mine and the proposed mining activities will take place on the Farms Dalyshope 232 LQ and Klaarwater 231 LQ. The EA application will therefore focus on these two properties only for this phase of the Dalyshope Project.

Anglo considers the establishment of an opencast mine accessed via a boxcut and ramp arrangement located in the north-eastern corner of Farm Dalyshope. The mine will produce approximately 2.4 million tonnes per annum (Mtpa) of thermal coal product for approximately five years. After five years, the mine will increase production to approximately 12 Mtpa of product for approximately 25 years from a single open pit (OC1), giving a total Life of Mine (LoM) of approximately 30 years.

1.1.1 Project Location

The Dalyshope Project is located within the Lephalale Local Municipality in the Waterberg District. The nearest towns are Steenbokpan located 20 km south and Stockpoort located 25 km northeast of the project area. The nearest major town is Lephalale situated approximately 70 km southeast of the project area.

The D175 secondary road between Steenbokpan and Stockpoort runs along the western boundary of the project area and then continues along its northern boundary. Motorists travelling along these roads in the vicinity of the project area are potential visual receptors.

The proposed site is approximately 1 644 hectares (ha) in size. The coordinates for the centre of the project area are 23°33'14.56"S and 27°14'4.93"E (Figure 1-1).

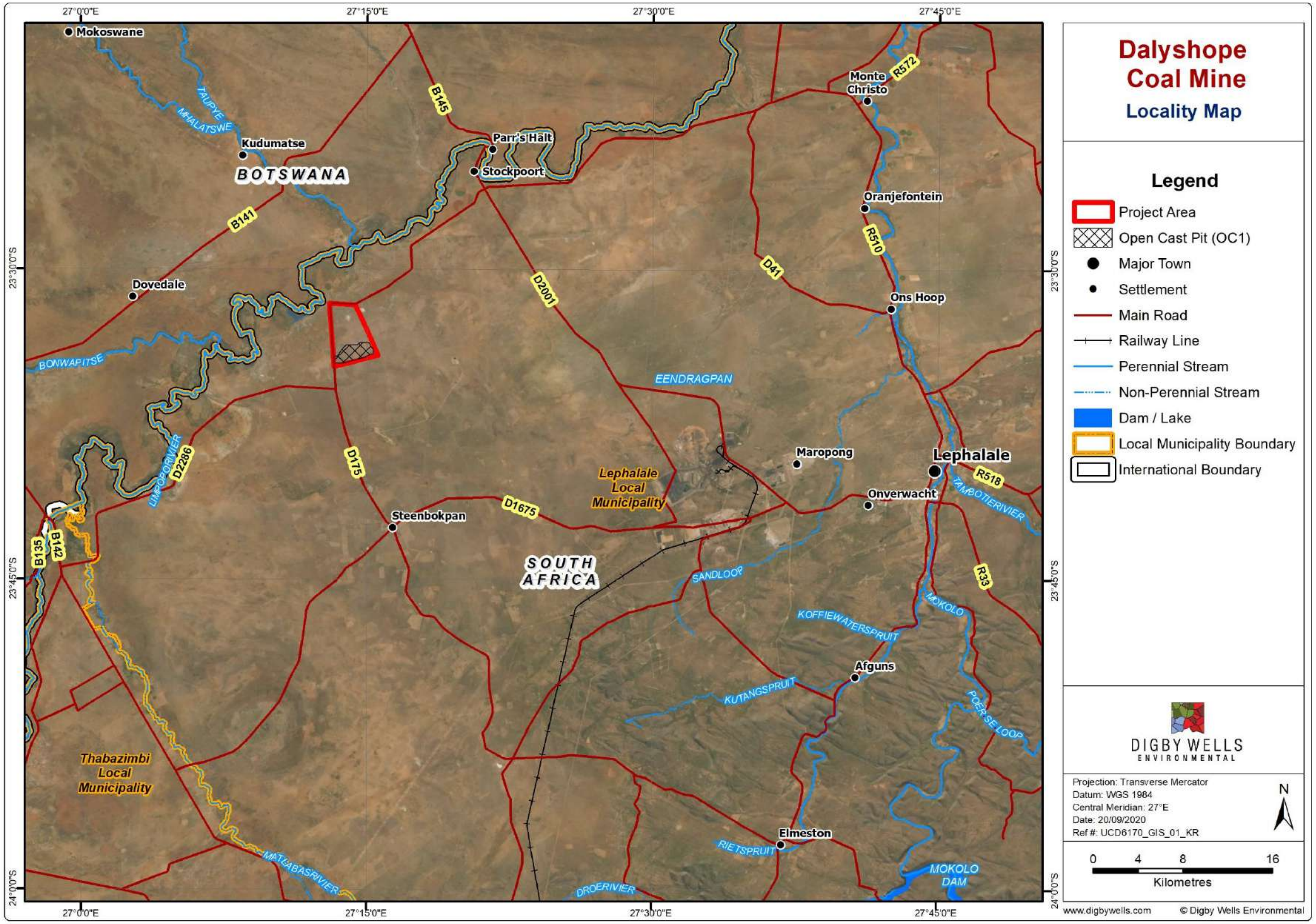

Figure 1-1: Local Setting

1.1.2 Proposed Infrastructure and Activities

The main infrastructure associated with the Dalyshope Project includes (but is not limited to), as indicated in Figure 1-2:

- Contractors laydown yard;
- Temporary stockpiles for construction;
- Temporary Pollution Control Dam (PCD) for construction;
- Opencast 1 ("OC1") pit
- Run-of-Mine (ROM) stockpiles;
- Slew product stockpiles;
- Discard facility;
- Topsoil and subsoil stockpiles;
- Overburden (Hards / Softs) stockpiles;
- Weighbridges;
- Conveyers belts;
- Workshop;
- Two PCDs for the operational phase;
- Washing plant;
- Crush and Screen plant;
- Offices;
- Change-house;
- Stores;
- Laboratory;
- Laundry facility
- Water tanks;
- Potable water pipeline and distribution;
- Dirty water pipeline;
- Sewage Treatment Plant;
- Water Treatment Plant;
- Brine Pond;
- Diesel/wash bay and oil separator;
- Explosives magazine;
- Stormwater management infrastructure;
- Powerline/s;
- Substation;
- Rail link and Rail loadout facility;
- Brake-test ramp;
- Light Duty Vehicle (LDV) and light vehicle access road;
- Truck access road; and
- Road upgrade (Steenbokpan to site).

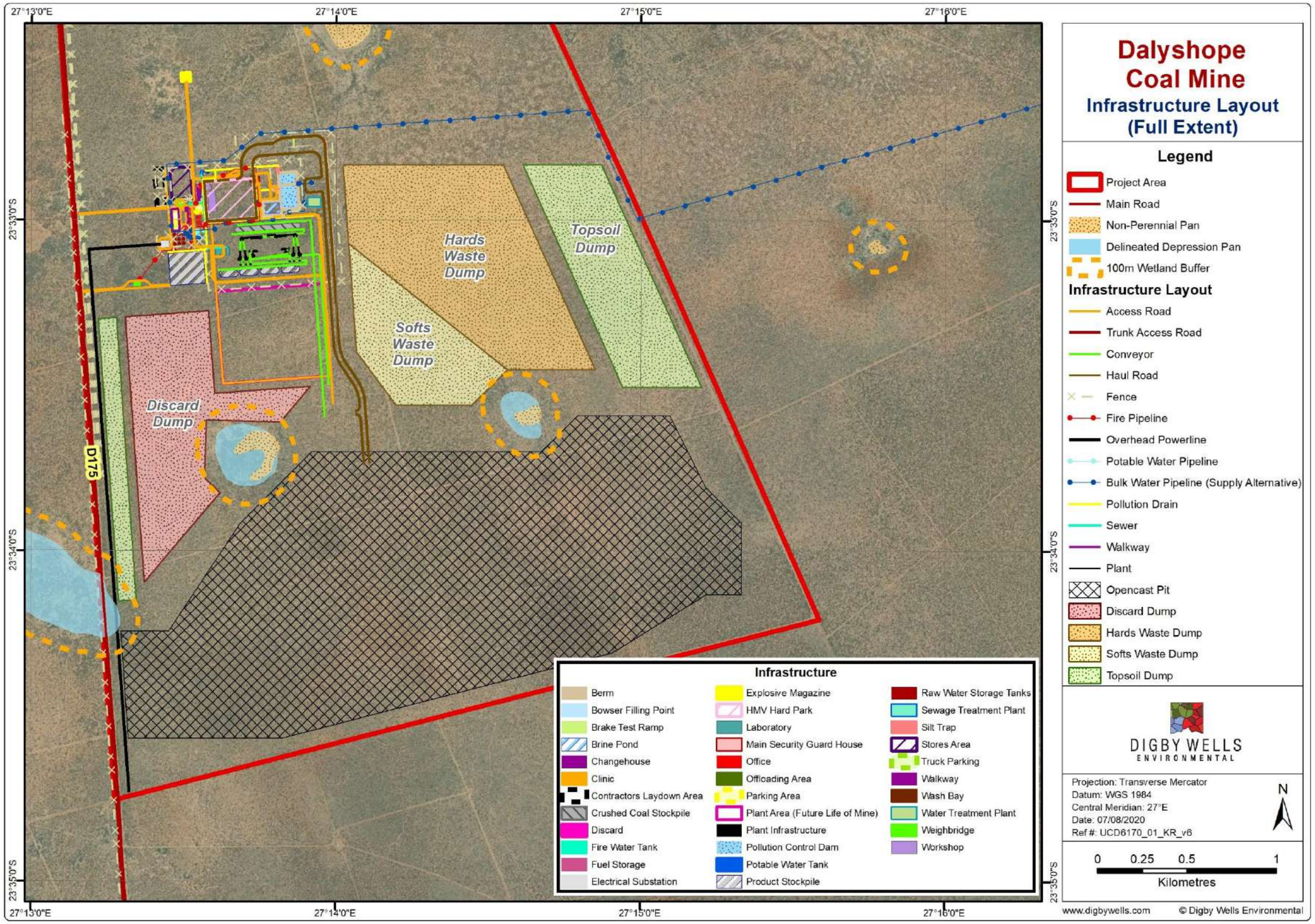

Figure 1-2: Infrastructure Layout

1.2 Scope and Purpose of this Report

This report constitutes the VIA and serves to describe the current topography and visual/aesthetic character of the receiving environment; and the expected topographical and visual impacts of the proposed Dalyshope Project. The impacts are described and rated, and mitigation/management measures are proposed to reduce the negative visual impacts of the Dalyshope Project. The following objectives were identified to achieve this aim:

- Examine aerial photography available for the project area;
- Create and analyse a topographical model;
- Create and analyse viewshed models;
- Describe the topography and visual/aesthetic character of the receiving environment based on desktop modelling and field observations during the site visit;
- Describe the current and post development visual aspects of the project area;
- Identify sensitive visual receptors and key public viewpoints that will be impacted on by the proposed Dalyshope Project;
- Identify the impacts that the proposed infrastructure will have on the topographical and visual landscape, by rating the scale, duration, severity and probability of the impacts occurring; and
- Provide mitigation measures and recommendations which aim to reduce the potential visual impacts.

1.3 Assumptions, Limitations and Exclusions

Despite the evidence presented in this report, it must be noted that a VIA is arguably subjective by nature. This subjectivity is due to the different opinions that receptors may have of a proposed project. Oberholzer (2005) defines receptors as “individuals, groups or communities who are subject to the visual influence of a particular project”. A receptor may be partial to the fact that a proposed project is occurring in an area, which becomes a source of economic upliftment for a community, whereas another receptor may view a proposed project as a negative factor which could hamper tourism or recreational activities.

The VIA modelling process includes a viewshed analysis, which takes topography and proposed development dimensions into account. Certain factors that have the potential to reduce or increase the visual impact of a proposal development have not been accounted for as part of the modelling process including vegetative cover and weather conditions. For instance, vegetation near a receptor’s viewpoint can greatly reduce that receptor’s view of a proposed project. Weather conditions and seasonal changes can also affect a receptor’s view of a proposed project.

A topographical model was created using the available 5-m resolution (where resolution refers to the minimum mapping unit) contour data from Chief Directorate: National Geo-Spatial Information (CD:NGI). The CD:NGI 5-m contour dataset is a South African dataset with coverages restricted to the national extent. As a component of the modelling environment extended beyond South Africa's border in Botswana, elevation data supplements had to be made with the 30-m resolution ALOS World 3D-30m (AW3D30) dataset.

It must be noted that vegetation and existing surface infrastructure around the proposed development was not included in the theoretical viewshed model, due to the elevation inputs into the modelling process being Digital Terrain Model (DTM) in nature, opposed to a Digital Surface Model (DSM).

A limitation to this study was that some infrastructure heights were not available, and assumptions were made in this regard. These assumptions were based on the heights of infrastructure from similar projects.

At the time that this VIA was conducted, no aerial imagery and associated site-specific contour data was made available. The accuracy of the elevation data therefore relates to the CD:NGI and AW3D30 products. Alternative sources of aerial imagery were therefore used to characterise the study area, which included interpretations from satellite imagery hosted through the Google Earth platform. Digby Wells has however validated the receptor identification process by conducting a site visit to the project area.

2 Relevant Legislation, Standards and Guidelines

The following national legislation and guidelines form part of the legislative and policy framework of the VIA.

2.1 National Legislation

At a national level, the following legislative documents potentially apply to the VIA:

- Regulations in Chapter 5 (Integrated Environmental Management) of the NEMA and the Act in its entirety. The Act states that "the State must respect, protect, promote and fulfil the social, economic and environmental right of everyone…" Landscape is both moulded by, and moulds, social and environmental features;
- The National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and related provincial regulations – in some instances there are policies or legislative documents that give rise to the protection of listed sites. The NHRA states that it aims to promote "good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed for future generations". A holistic landscape whose character is a result of the action and interaction and/or human factors has strong cultural associations as societies and the landscape in which they live are affected by one another in many ways; and

- Section 17 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEM:PAA) sets out the purposes of the declaration of areas as protected areas which includes the protection of natural landscapes. Landscapes are defined by the natural, visual and subjectively perceived landscape; these aspects of a landscape are intertwined to form a holistic landscape context.

2.2 Guidelines

The "Guideline for involving visual and aesthetic specialists in EIA processes" document by Oberholzer (2005) has been used as a best practice guideline for this VIA. Although these guidelines were developed for the Western Cape province of South Africa, they are relevant for this VIA as "the guidelines promote the principles of EIA best practice without being tied to specific legislated national or provincial EIA terms and requirements" (Oberholzer, 2005).

3 Data Used in this Report

The data used for the VIA is summarised in Table 3-1 below.

Table 3-1: Data for VIA

Data	Source	Date
Site Layout and Dimensions from client	Universal Coal Development IV (Pty) Ltd	2020
Aerial Imagery	Google Earth derived satellite imagery & CD:NGI Aerial Imagery	2020
5 m Contour Lines	CD:NGI	2017
30 m Elevation Data	AW3D30	Operational between 2006 - 2011
1: 50 000 Topographical Data	CD:NGI	-
Local Municipality Boundary	Municipal Demarcation Board	2016
District Municipality Boundary	Municipal Demarcation Board	2016
Provincial Boundary	Municipal Demarcation Board	2016
International Boundary	Municipal Demarcation Board	2016
Vegetation	Mucina and Rutherford	2012
Garmin GPS Field Data	Captured during site visit	2020

3.1 Details of the Site Visit

The site visit was conducted on 2 September 2020. The weather conditions for the site visit were overcast. The weather and atmospheric conditions were suitable for the collection of sufficient photographs and the necessary visual observations.

4 Methodology

This section of the report describes the methodology adopted in characterising the visual environment of the project area.

4.1 Determining the Baseline Environment

This VIA was performed using geographically referenced information and aerial photography, together with the professional opinion of an experienced visual assessor.

The study identified and evaluated the surface features using an ArcGIS 3D Analyst extension to create a topographical model.

4.1.1 Characteristics of Visual Impacts

The expected visual impact of the Dalyshope Project was categorised based on the type of receiving environment and the type of development as detailed in Table 4-1 and Table 4-2 (Oberholzer, 2005). These tables provide an indication of the visual impacts that can be expected for different types of developments in relation to the nature of the receiving environment.

According to Oberholzer (2005), the Dalyshope Project is classified as a **Category 5 development** (Table 4-1). The receiving environment can be described as an **area of high scenic, cultural or historical significance** and it is therefore expected that the proposed Dalyshope Project will have a **very high visual impact** on the environment (Table 4-2).

Table 4-1: Key to Categorisation of Development (adapted from Oberholzer, 2005)

Type of Development	Examples of Development
Category 1	Nature reserves, nature related recreation, camping, picnicking, trails and minimal visitor facilities.
Category 2	Low-key recreation/resort/residential type development, small-scale agriculture/nurseries, narrow roads and small-scale infrastructure.
Category 3	Low density resort/residential type development, golf or polo estates, low to medium-scale infrastructure.
Category 4	Medium density residential development, sports facilities, small-scale commercial facilities/office parks, one-stop petrol stations, light industry, medium-scale infrastructure.

Type of Development	Examples of Development
Category 5	High density township/residential development, retail and office complexes, industrial facilities, refineries, treatment plants, power stations, wind energy farms, power lines, freeways, toll roads, large-scale infrastructure generally. Large-scale development of agricultural land and commercial tree plantations. **Quarrying and mining activities with related processing plants.**

Table 4-2: Categorisation of Expected Visual Impact (adapted from Oberholzer, 2005)

Type of Environment	Type of Development (Low to High Intensity)				
	Category 1 Development	**Category 2 Development**	**Category 3 Development**	**Category 4 Development**	**Category 5 Development**
Protected / wild areas of international, national or regional significance	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected	Very high visual impact expected
Areas or routes of high scenic, cultural or historical significance	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected	**Very high visual impact expected**
Areas or routes of medium scenic, cultural or historical significance	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected
Areas or routes of low scenic, cultural or historical significance	Little or no visual impact expected. Possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected
Disturbed or degraded sites / run-down urban areas / wasteland	Little or no visual impact expected. Possible benefits	Little or no visual impact expected. Possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected

For projects where a high or very high visual impact is expected, Oberholzer (2005) recommends that a Level 5 visual assessment be conducted which includes:

- Identification of issues raised in the scoping phase and site visit;
- Description of the receiving environment and the proposed project;
- Establishment of view catchment area, view corridors, viewpoints and receptors;
- Indication of potential visual impacts using established criteria;
- Inclusion of potential lighting impacts at night;
- Description of alternatives, mitigation measures and monitoring programmes; and
- Complete 3D modelling and simulations, with and without mitigation.

4.1.2 Visual/Aesthetic Character and Topography

CD:NGI aerial photography as well as interpretations of Google Earth hosted satellite imagery of the area was examined to evaluate the topography and identify surface features in the project area.

A topographical model was created as a digital representation of the elevation for the project area, from which the resultant model was used to create a slope model using the Slope Tool. Both models were created using the ArcGIS 3D Analyst Extension. A topographical model provides the elevation of the terrain while the slope model indicates the steepness or the degree of incline of the terrain. Together, these models give a visualisation of the landscape and the impact it has on the visibility of the project area.

5 Existing Environment

5.1 Visual/Aesthetic Character and Topography

This section describes the results obtained from the analysis of the topographical and slope models created in ArcGIS.

The project area and surrounds are relatively flat. The topographical model indicates that the elevation of the project area decreases from 862 metres above mean sea level (mamsl) in the southeast to 818 mamsl in the northwest on the banks of the Limpopo River. The topographical model (Figure 5-1) illustrates that the elevation gradually increases further away from the Limpopo River and its floodplains.

Most of the project area has gentle slopes of less than 1°. Isolated slopes of between 2° and 5° occur on the banks of the Limpopo River in the north-western corner of the project area. Figure 5-2 illustrates the slope model of the project area

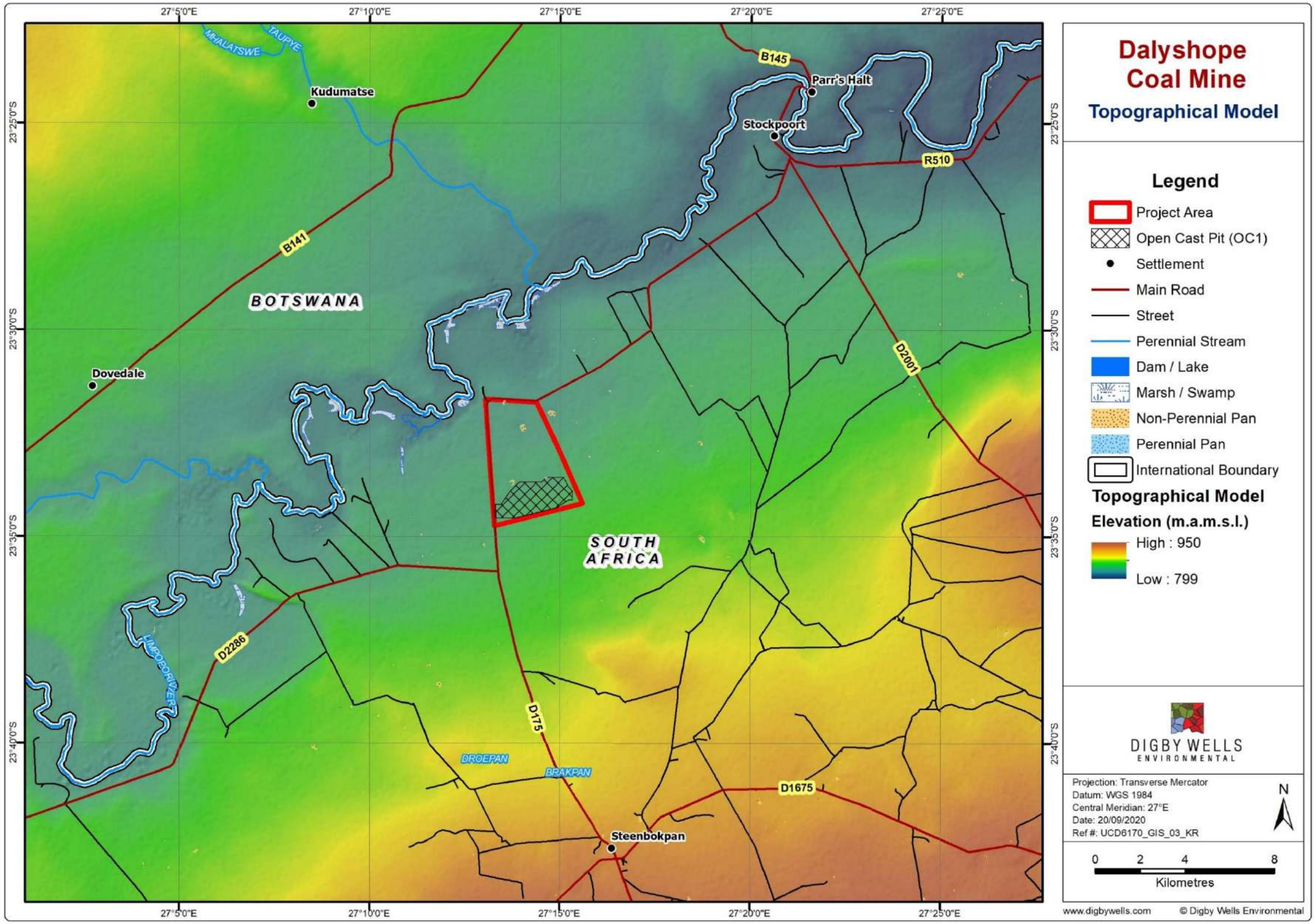

Figure 5-1: Topographical Model

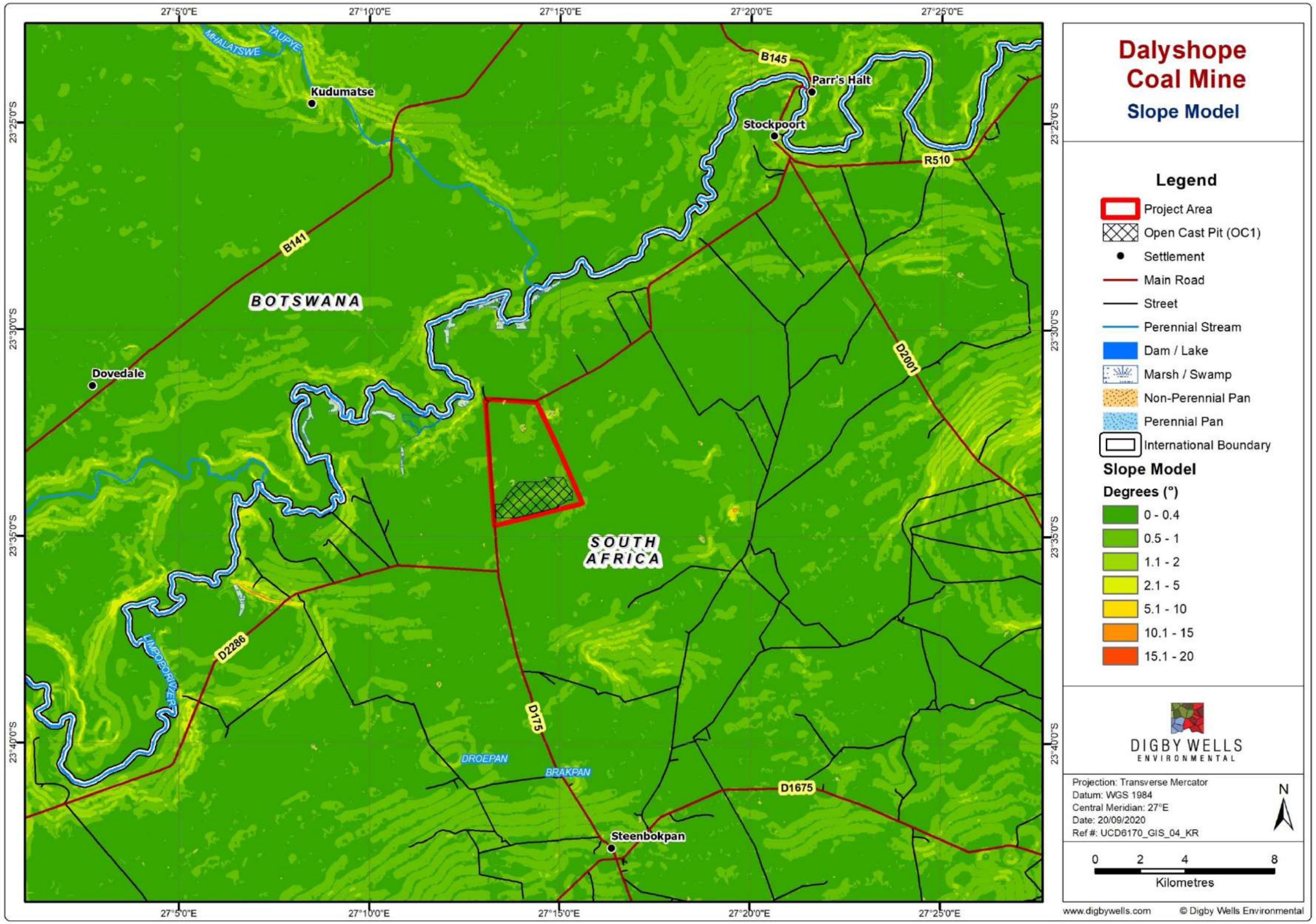

Figure 5-2: Slope Model

Such slope and topography provides very low visual screening of the proposed development. Based on the Mucina and Rutherford Vegetation Classification (2012) dataset, the surrounding area is characterised by Limpopo Sweet Bushveld vegetation (Figure 5-4). The bushveld vegetation is comprised of grassland, bushes and trees, which are often Vachellia (previously known as Acacia) dominated. The vegetation in the project area and surrounds is relatively dense and has an average height of 4-m. During the site visit, it was observed that such vegetation is expected to provide moderate natural screening of the proposed project (Figure 5-3).

Figure 5-3: Typical Vegetation in the Project Area

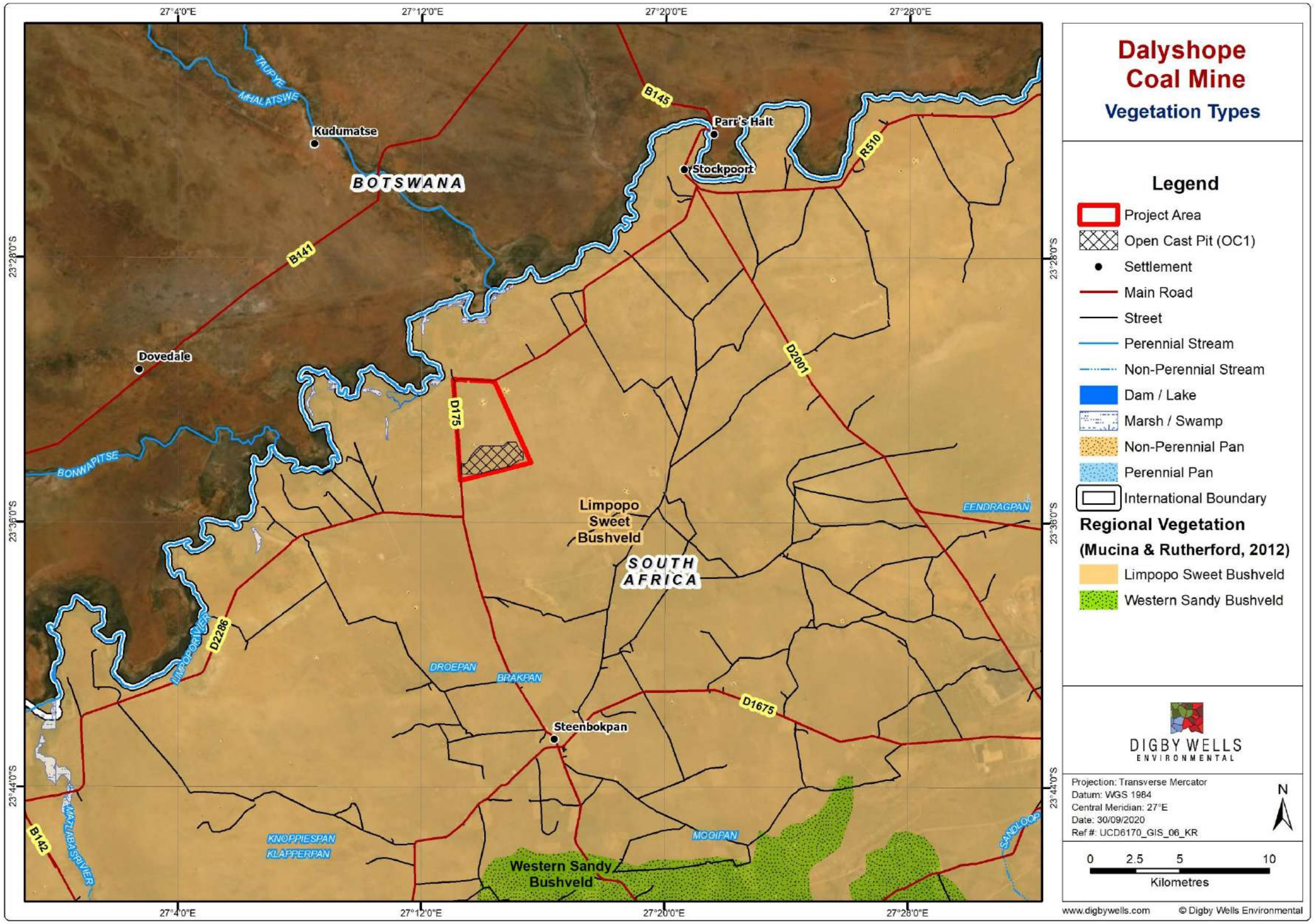

Figure 5-4: Vegetation Types

5.2 General Land Use

The Dalyshope Project is situated in the Waterberg Coalfield area. This region is largely undeveloped and is characterised by undisturbed natural bushveld vegetation. Land uses in the region include game farming, hunting, tourism, agriculture, mining and power generation. The Dalyshope Project is expected to have a negative visual impact on game farming and tourism these activities as the nearest operational mines are the Boikarabelo and Grootegeluk Coal Mines situated 10 km southwest and 50 km southeast of the project area, respectively. The Medupi and Matimba Power Stations are situated 50 km and 60 km southeast of the project area, respectively.

5.3 Viewshed Analysis

The resultant topographical model was used to create viewshed models using a combination of viewshed modelling techniques in a GIS-based environment. These viewshed models illustrate the areas from which the proposed project will potentially be visible, taking into account the estimated height of the proposed infrastructure (Table 5-1).

Table 5-1: Infrastructure Height Assumptions for Viewshed Modelling

Infrastructure	Height (m)	Source
Overburden, Topsoil and Discard Dumps	30	Provided
Potable Water Tank	16	Provided[1]
Crusher	15	Assumed
Bowser Filling Point	12	Provided[1]
Workshops	10	Provided[1]
Laboratory	10	Assumed
Product Stockpile	10	Assumed
Thickener	10	Assumed
Overhead Powerlines	5.5	Assumed
Stores	5	Assumed
Sewage Treatment Plant	5	Assumed
Water Treatment Plant	5	Assumed
Weighbridge	3.5	Assumed
Buildings & Offices	Single Storey (3)	Assumed
Pollution Control Dam	3	Provided[1]
Conveyor	3	Assumed

[1] Infrastructure heights provided by Anglo American Thermal Coal for VIA conducted in 2014.

Infrastructure	Height (m)	Source
Raw Water Storage Reservoirs	3	Assumed
Fire Water Tank & Pump Station	3	Assumed

The concept of viewshed modelling is depicted in Figure 5-5. The topography denotes whether a development will be visible from a receptor or not. In Figure 5-5, the development is only visible from the receptors within the valley and on the slopes of the hills facing it. The development will be hidden from all receptors beyond the first hills.

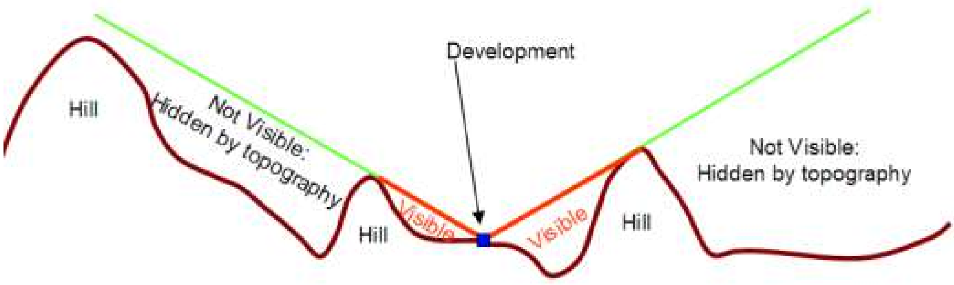

Figure 5-5: Theoretical Background of Viewshed Modelling

Viewshed models were created for daytime conditions only. These viewshed models are based on the topography only and do not take the screening effect of vegetation into account. The viewshed models depict worst case scenarios and show the areas from which the Project may potentially be visible. Visual exposure and the visual impact of a development diminish exponentially with distance (Oberholzer, 2005).

Based on the visibility of the existing infrastructure and the location of the main sensitive receptors and based on the heavily disturbed peripheral environment, the zone of influence was determined to be within 20 km for the purpose of this study. Given the presence of visual screening in the form of natural vegetation screening, the impact beyond 20 km was deemed negligible.

Based on the findings of fieldwork conducted, the following categories were used for the viewshed models:

- 0 – 5 km: Potentially high visual exposure;
- 5 – 10 km: Potentially moderate visual exposure;
- 10 – 15 km: Potentially low visual exposure; and
- 15 – 20 km: Potentially very low visual exposure.

6 Findings and Discussion

The findings include a description of the results of the viewshed analysis and the identification of the sensitive receptors of the project area.

Four individual viewshed models were run to quantify the visibility of the proposed infrastructure of each infrastructure category namely:

- Opencast Pit;
- Dumps (including the Overburden, Topsoil and Discard);
- Built Surface Infrastructure (including the PCD, Crusher, Bowser Filling Point, Product Stockpile, Workshops, Buildings and Offices as well as other infrastructure listed in Table 5-1) and a;
- Cumulative Impacts Viewshed Model.

These models are used to determine areas where the proposed infrastructure will be visible from in order to quantify the impact of the proposed infrastructure on the receiving environment.

These viewshed models were based on the topography only and do not take the screening effect of vegetation into account. These viewshed models depict the worst-case scenario and show the areas from which the Dalyshope Project may potentially be visible.

6.1 Viewshed Models

6.1.1 Theoretical Viewshed Model

The theoretical viewshed model depicts the area from which the proposed infrastructure will potentially be visible. The model indicates that the Dalyshope Project will be visible to a number of receptors within a 20 km radius, including residents of Steenbokpan, Stockpoort and Parr's Halt in South Africa and Dovedale and Kudumatse in Botswana; as well as road users of the R510, D2286, D175 and D1675 in South Africa and the B141 and B145 in Botswana (Figure 6-1).

Thus, the theoretical viewshed model was refined to four daytime practical viewshed models with a buffer of 20 km around the proposed infrastructure and divided into areas that are likely to experience different categories of visual exposure. Due to the vegetation of the receiving environment, it is noted that the visual impact of the proposed infrastructure is minimal outside of this 20 km zone of influence.

6.1.2 Proposed Opencast Pit

The daytime practical viewshed model (Figure 6-2) depicts the area from which the proposed opencast pit may potentially be visible during the day. This daytime viewshed model covers an area of approximately 535.88 km^2. The viewshed is noticeably limited because an opencast pit is set on ground level and few higher altitude areas will be able to see its depths. The receptors with high visual exposure are limited to within a 5 km radius of the Dalyshope Project, while receptors located on the banks of the Limpopo River as well as to the east and southwest of the project area may potentially not have any visual exposure from the pit. The viewshed areas for the categories are listed in Table 6-1 below.

Table 6-1: Viewshed Area per Category (Opencast Pit)

Category	Impact	Viewshed Area (km^2)
0 – 5 km	Potentially High Visual Exposure	64.62
5 – 10 km	Potentially Moderate Visual Exposure	116.1
10 – 15 km	Potentially Low Visual Exposure	148.44
15 – 20 km	Potentially Very Low Visual Exposure	206.72

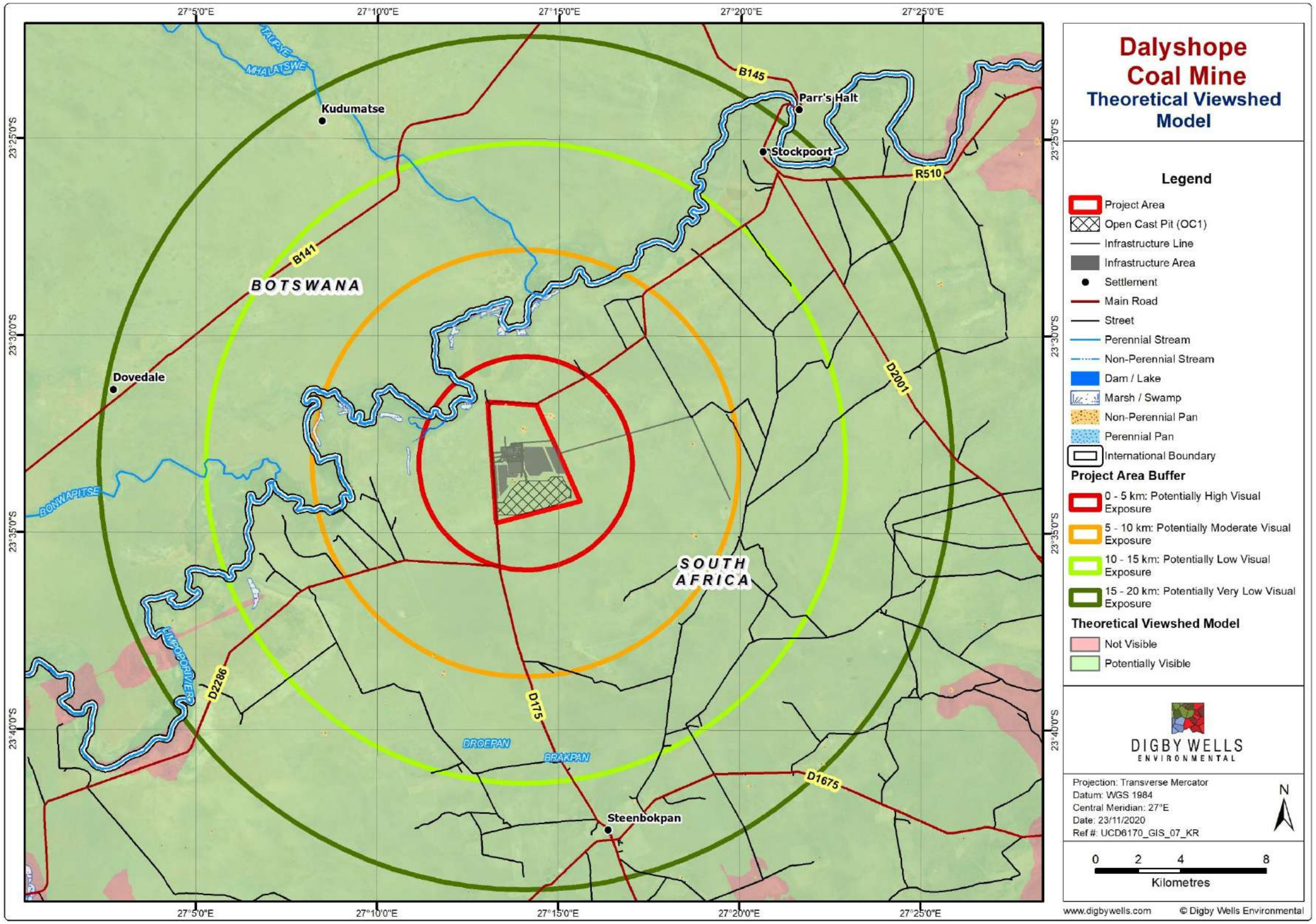

Figure 6-1: Theoretical Viewshed Model

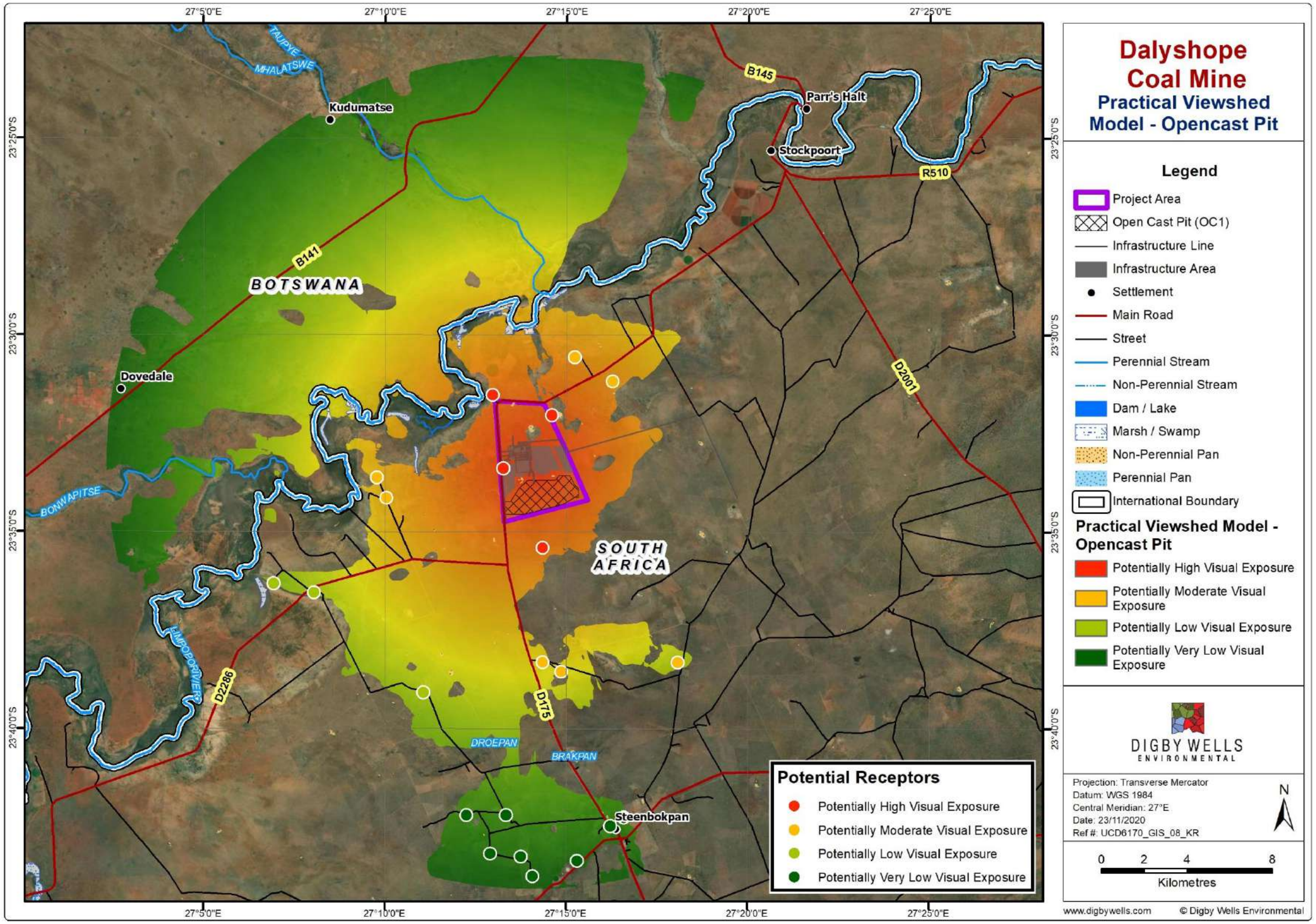

Figure 6-2: Practical Viewshed Model – Opencast Pit

6.1.3 Proposed Dumps

The daytime practical viewshed model (Figure 6-3) depicts the area from which the proposed dumps may potentially be visible during the day. This daytime viewshed model covers an area of approximately 1 058.1 km^2. The viewshed is noticeably larger due to the dump's proposed height of 30 m (Table 5-1). Receptors with high visual exposure are within a 10 km radius while receptors located on the higher altitude areas to the southeast of the Dalyshope Project, as well as few in lower terrain on the banks of the Limpopo River and some sporadic depressions in elevation, have a potentially very low visual exposure. The viewshed areas for the categories are listed in Table 6-2 below.

Table 6-2: Viewshed Area per Category (Dumps)

Category	Impact	Viewshed Area (km^2)
0 – 5 km	Potentially High Visual Exposure	78.06
5 – 10 km	Potentially Moderate Visual Exposure	222.24
10 – 15 km	Potentially Low Visual Exposure	333.23
15 – 20 km	Potentially Very Low Visual Exposure	424.57

6.1.4 Proposed Built Infrastructure

The daytime practical viewshed model (Figure 6-4) depicts the area from which the proposed built surface infrastructure may potentially be visible during the day. This daytime viewshed model covers an area of approximately 783.71 km^2. The viewshed covers some of the 20 km zone of influence because the tallest proposed surface infrastructure has a height of 16 m (Table 5-1). Much like with viewshed for the proposed dumps, receptors with high visual exposure are within less than a 10 km radius while receptors located on the banks of the Limpopo River ,as well as to the east and southwest of the project area may potentially not have any visual exposure. The viewshed areas for the categories are listed in Table 6-3 below.

Table 6-3: Viewshed Area per Category (Built Infrastructure)

Category	Impact	Viewshed Area (km^2)
0 – 5 km	Potentially High Visual Exposure	76.1
5 – 10 km	Potentially Moderate Visual Exposure	208.04
10 – 15 km	Potentially Low Visual Exposure	230.16
15 – 20 km	Potentially Very Low Visual Exposure	269.41

6.1.5 Cumulative Practical Viewshed Model

The daytime practical viewshed model (Figure 6-5) depicts the cumulative area from which the proposed Dalyshope Project may potentially be visible during the day. This daytime viewshed model covers an area of approximately 1 061.08 km^2. The viewshed covers much of the 20 km zone of influence due to the height of the proposed infrastructure as well as relatively flat terrain that the Dalyshope Project is located. The areas with high visual exposure are within less than a 10 km radius of the project. Some areas on the banks of the Limpopo River and higher elevation area to the southeast of the project may potentially not have any visual exposure. It must be noted the area is characterised by relatively dense natural Bushveld vegetation. This vegetation provides some screening effects thereby reducing the extent of the viewshed area. The viewshed areas for the categories are listed in Table 6-4 below.

Table 6-4: Viewshed Area per Category (Cumulative)

Category	Impact	Viewshed Area (km^2)
0 – 5 km	Potentially High Visual Exposure	78.06
5 – 10 km	Potentially Moderate Visual Exposure	222.24
10 – 15 km	Potentially Low Visual Exposure	333.24
15 – 20 km	Potentially Very Low Visual Exposure	427.54

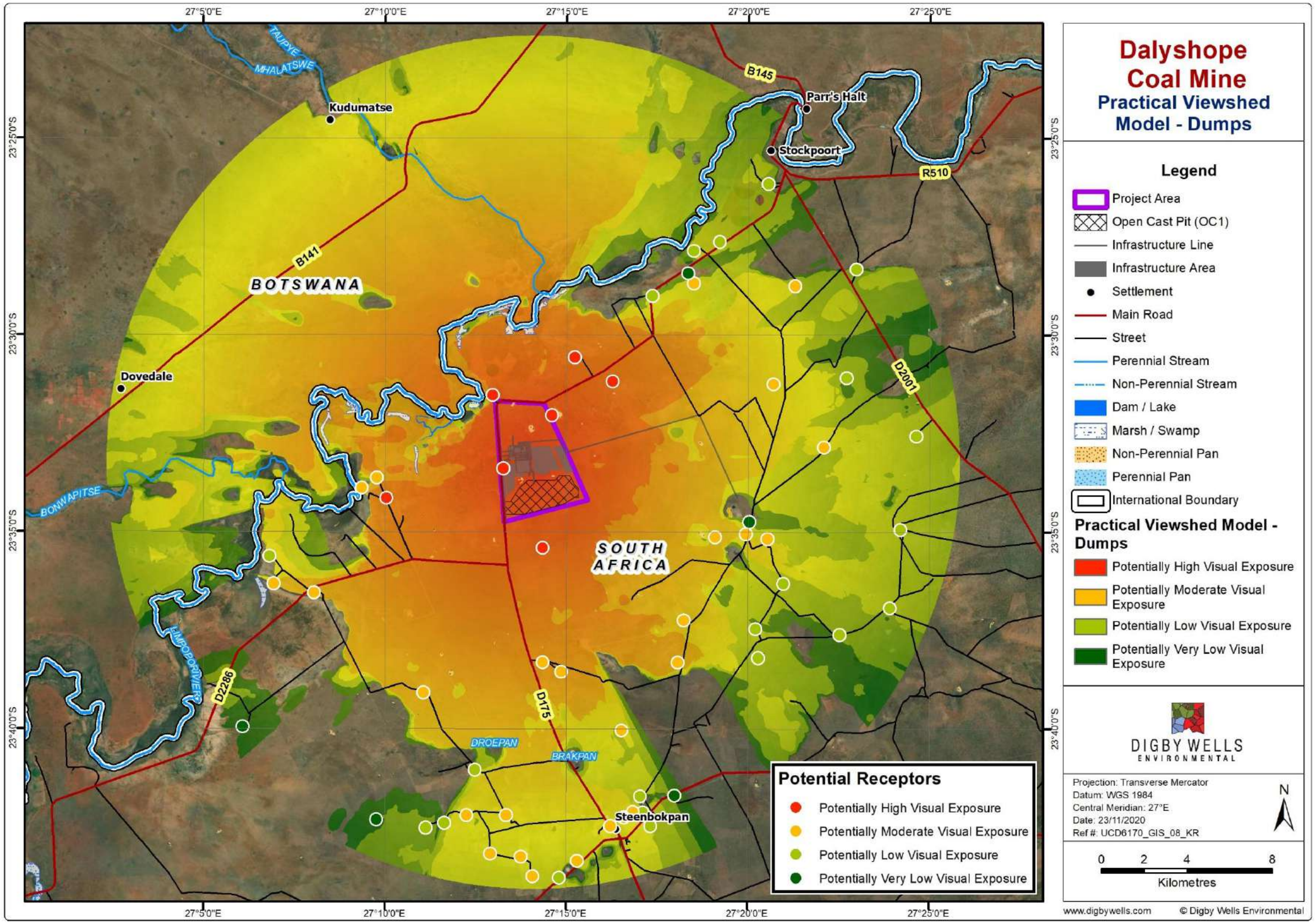

Figure 6-3: Practical Viewshed Model – Dumps

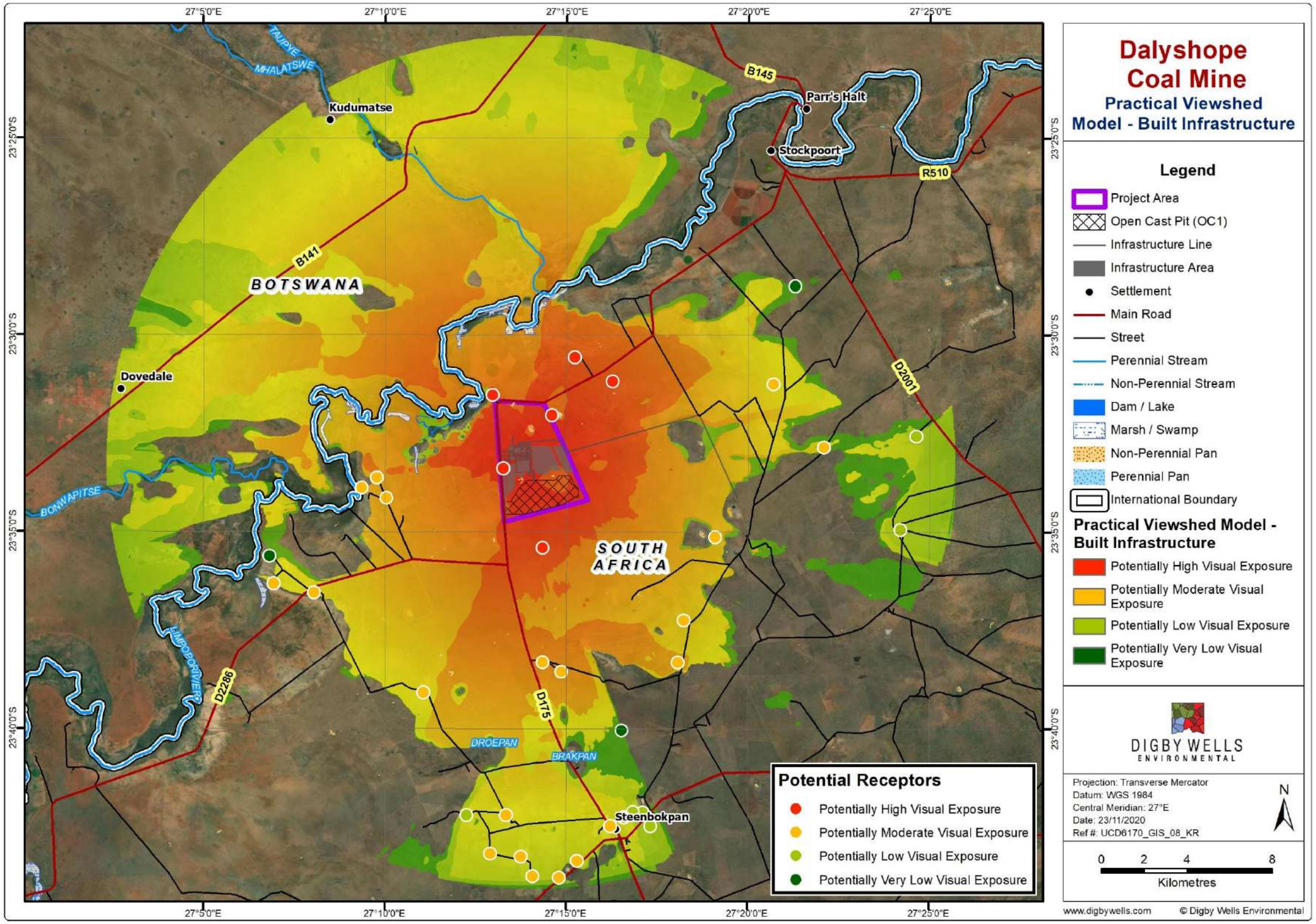

Figure 6-4: Practical Viewshed Model – Built Infrastructure

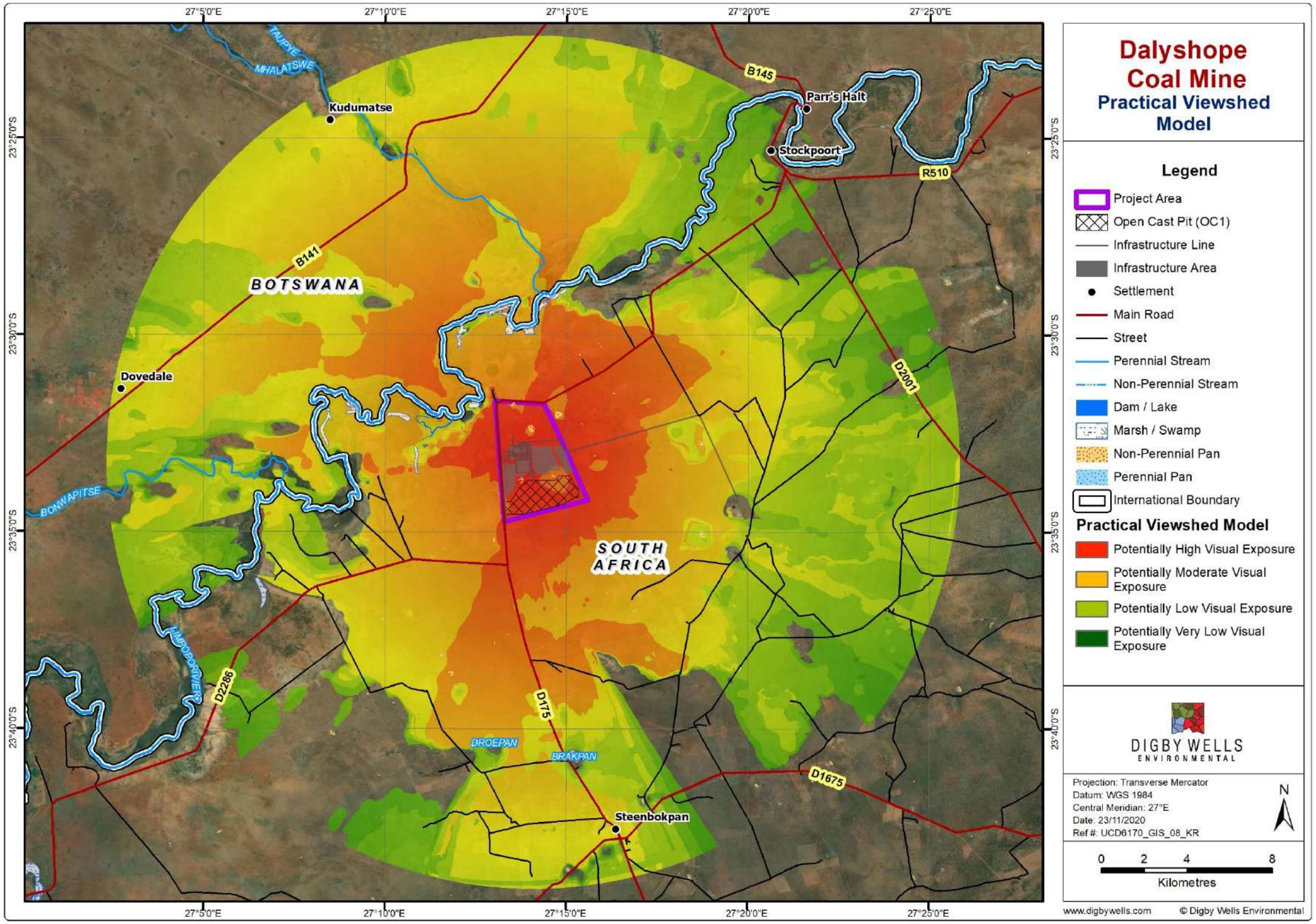

Figure 6-5: Practical Viewshed Model – Cumulative

6.2 Sensitive Receptors

The receptors identified within the viewshed area include residents of Steenbokpan and Stockpoort settlements in South Africa; and Dovedale and Kudumatse settlements in Botswana, as well as farm residences, game lodges and mining activity in the project area and surroundings. The models also indicate that the proposed Dalyshope Project will potentially be visible to road users on the R510 regional road in South Africa and several secondary roads (including the D175, D1675, D2001 and D2286 in South Africa and the B141 and B145 in Botswana) and farm roads in the vicinity of the project area as depicted in Figure 6-1 to Figure 6-5. The list of identified receptors is shown in Figure 6-6.

Table 6-5 below provides the potential visual receptors identified within the viewshed of each proposed infrastructure and gives a percentage of the number of receptors with potential visual exposure. A comprehensive list of the sensitive receptors can be found in Appendix A.

Table 6-5: Sensitive Receptors per Category

	Dumps		Buildings		Opencast Pit	
Visual Impact Category	**Number of Receptors Impacted**	**Percentage**	**Number of Receptors Impacted**	**Percentage**	**Number of Receptors Impacted**	**Percentage**
High	7	12%	6	17%	4	18%
Moderate	26	44%	21	58%	7	32%
Low	21	36%	6	17%	3	14%
Very Low	5	8%	3	8%	8	36%
TOTAL	**59**	**100%**	**36**	**100%**	**22**	**100%**

The visual sensitivity of receptors is dependent on the nature of the receptors (Oberholzer, 2005). Receptors in settlements, farm residences and game lodges have a high sensitivity, while receptors in mining areas have a low sensitivity. The table above shows that the Dumps have the highest visual impact as it affects 59 of the identified receptors, while the Built Infrastructure affects 36 of the receptors and the Opencast Pit affects only 22 receptors.

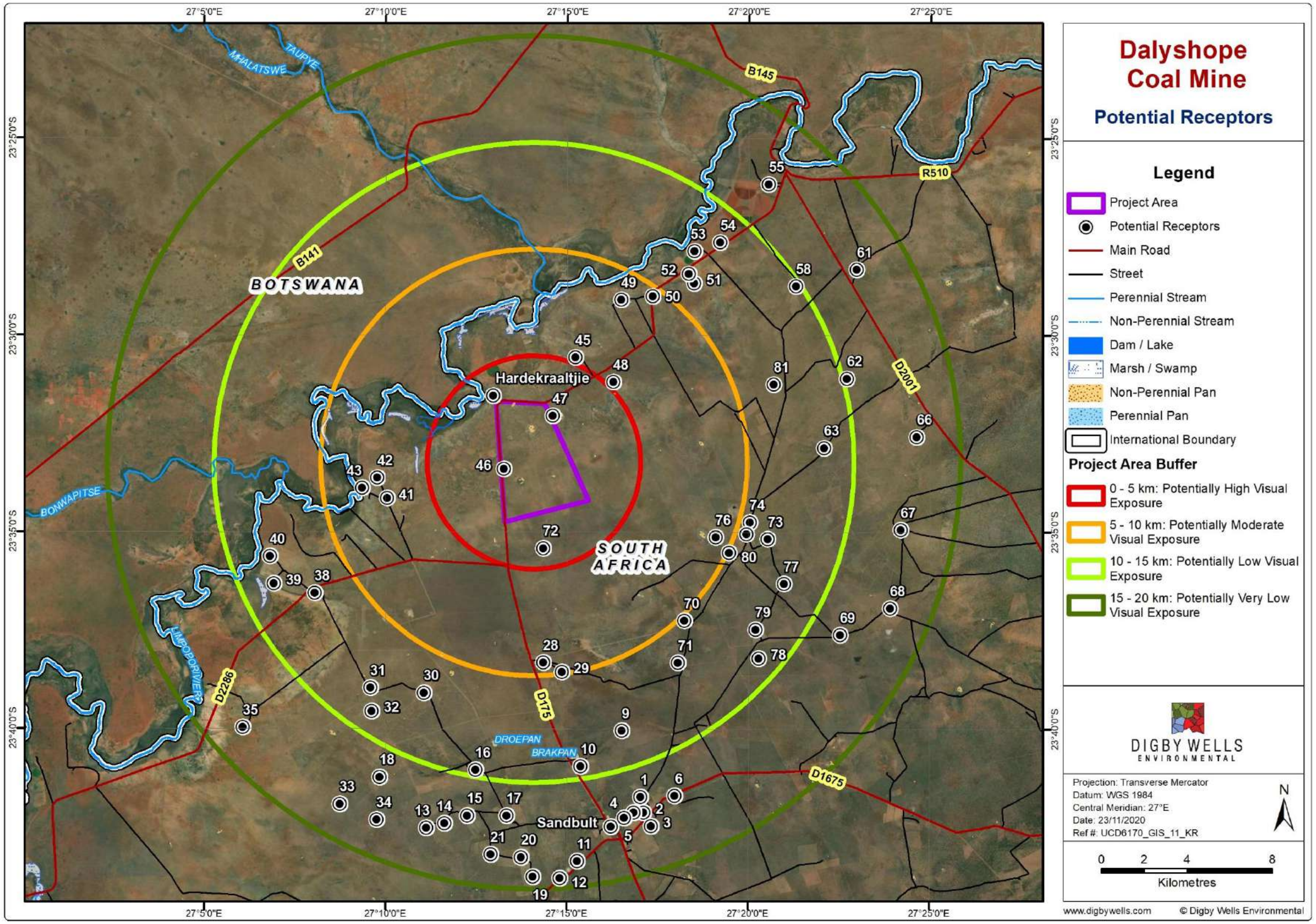

Figure 6-6: Potential Receptors in the Vicinity of the Project Area

6.3 Viewpoints

The viewpoints were created from photographs taken during the site visit which was conducted on 2 September 2020. Oberholzer (2005) defines a viewpoint as "a selected point in the landscape from which views of a particular project or other feature can be obtained".

Three viewpoints were identified to illustrate for the proposed Dalyshope Project would visually impact the receptors on the receiving environment. Figure 6-8 displays the viewpoint location and view direction in which the photographs were taken.

Based on the proposed infrastructure heights (Table 5-1), the practical viewshed model and from observations on site, the most significant daytime visual impact on the receiving environment will be from the overburden, topsoil and discard stockpiles, as these cover a large area and have a high proposed height. The focus of this discussion on viewpoints will be these infrastructure. The area where the proposed infrastructure is located on the photograph is highlighted with a red box.

It should be noted that these photographs were taken during winter and the vegetation cover will be more abundant and lusher during the wetter, summer months.

6.3.1 Viewpoint 1

Viewpoint 1 is located on Farm Hardekraaltjie, on the north-western edge of the project area. The photograph was taken in a south-south-easterly direction towards the project area with the indicated distances from the proposed overburden (3.2 km), discard (3.3 km) and topsoil stockpile (3.3 km) (Figure 6-7). Figure 6-7 illustrates the landscape being dominated by the Bushveld vegetation. The photograph shows a combination of grasses, trees and shrubs species at varying heights which will aid in providing a screening effect to the visual receptors.

Figure 6-7: Viewpoint 1

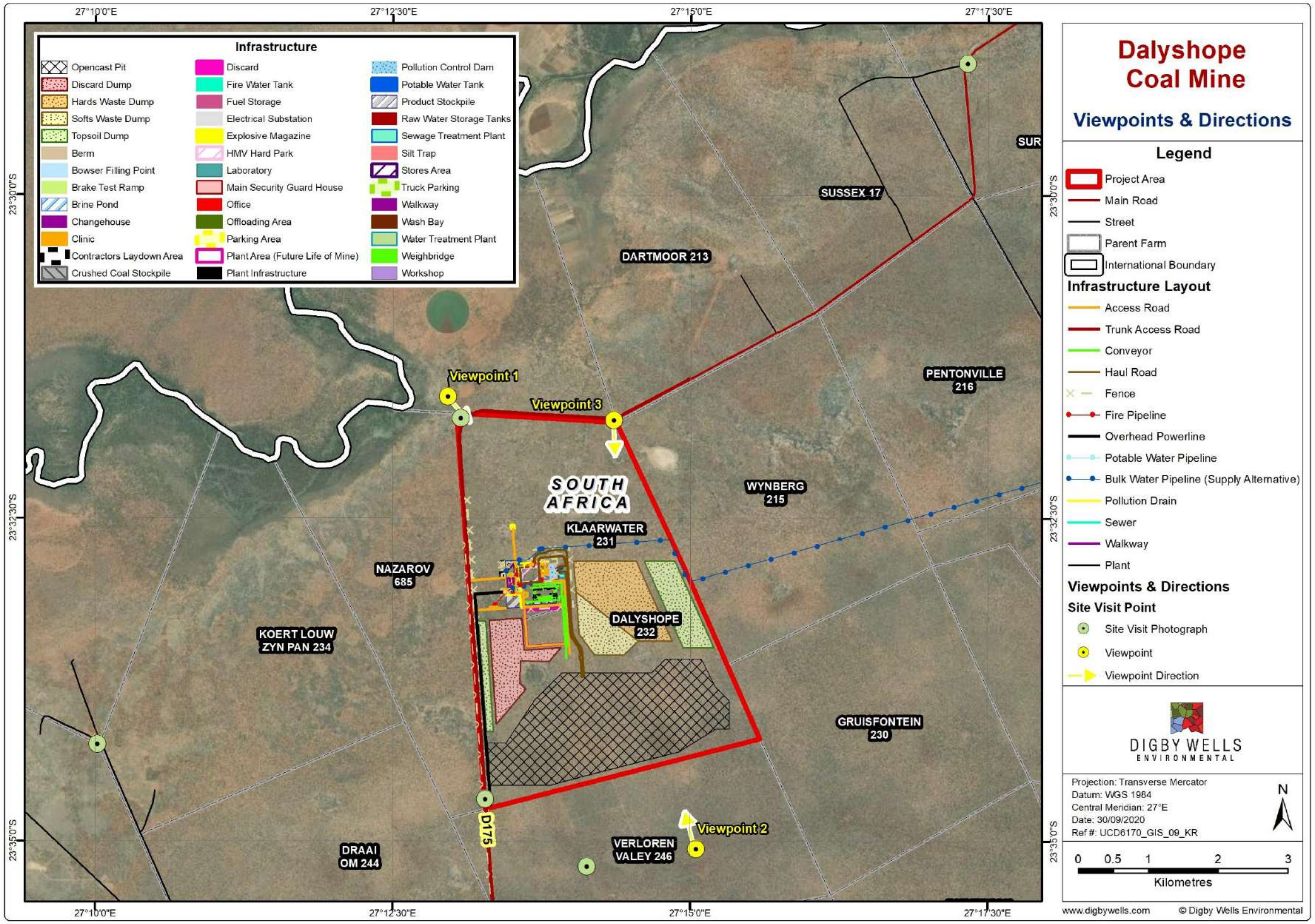

Figure 6-8: Viewpoints and Directions

6.3.2 Viewpoint 2

Viewpoint 2 is located on Farm Verloren Valey, on the southern edge of the project area. The photograph was taken in a northerly direction towards the project area with the indicated distance to the proposed overburden (2.9 km), discard (3.3 km) and topsoil stockpiles (2.8 km) (Figure 6-9). Similar to Figure 6-9, Figure 6-10 also illustrates the landscape being dominated by Bushveld vegetation with a combination of grasses, trees and shrubs species at varying heights. However, the vegetation is more sparse meaning that the visual absorption capacity of the vegetation will be low. More importantly, the viewpoint is located 1.3 km from the open pit which will increase the importance of having a visual barrier to assist in the reduction of the negative visual impact that proposed development will have on sensitive receptors.

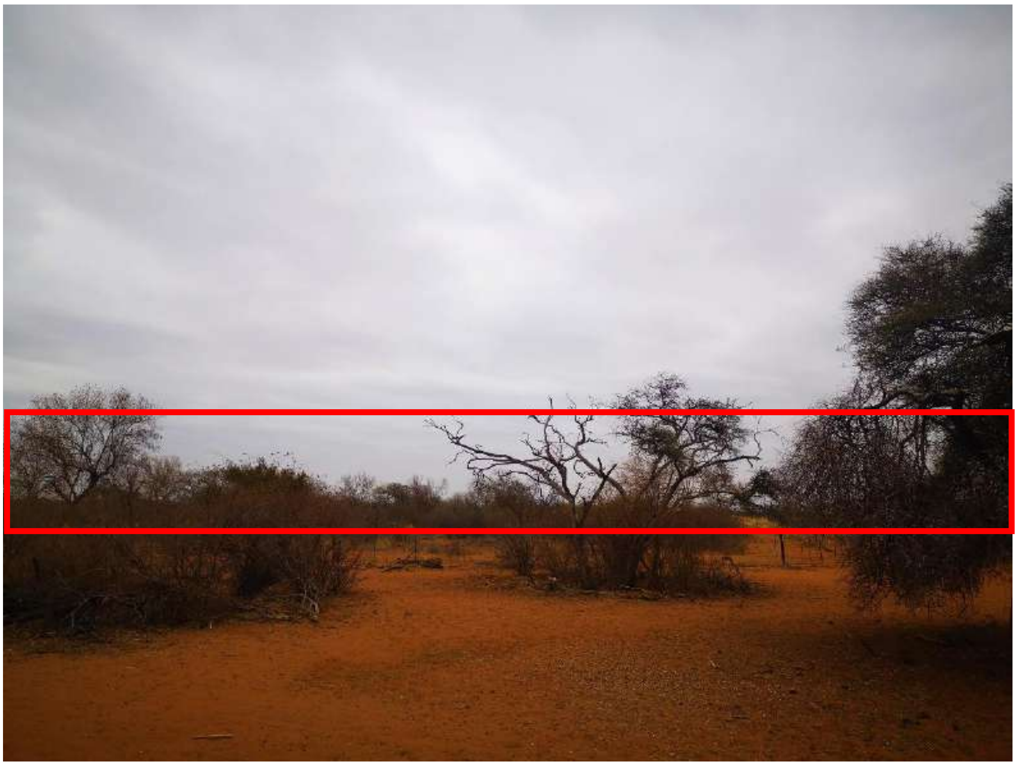

Figure 6-9: Viewpoint 2

6.3.3 Viewpoint 3

Viewpoint 3 is located on the D175 connecting Steenbokpan and the Stockpoort border post, on the north-eastern edge of the project area. The photograph was taken in a south-westerly direction with the indicated distance to the proposed overburden (2 km), discard (3.2 km) and topsoil stockpiles (2.1 km) (Figure 6-10). The figure provides the perspective of the motorist who will be using this district road. The height and density of the vegetation provides a screening effect making it difficult to see beyond the vegetation.

Figure 6-10: Viewpoint 3

7 Sensitivity of the Site

Based on the sense of place characterisation, along with the viewshed results obtained, the Dalyshope Project will have a high visual impact on the receiving environment. The most significant daytime visual impact will be from the topsoil, discard and the overburden dumps as these cover a large area and have a height of 30 m.

Oberholzer (2005) provides a number of criteria related specifically to VIAs (Table 7-1) and suggests that a proposed project should be assessed against these criteria before conducting the impact assessment. The rating and description highlighted in red in Table 7-1 indicates the criteria relevant to the Dalyshope Project. Table 7-1 provides a summary of the criteria and they are discussed in more detail in Sections 7.1 to 7.6 below.

Table 7-1: Specific Criteria for VIAs (adapted from Oberholzer, 2005)

Criteria	Rating	Description
Visibility of the project	**High visibility**	**Visible from a large area (e.g. several square kilometres)**
	Moderate visibility	Visible from an intermediate area (e.g. several hectares)
	Low visibility	Visible from a small area around the project site
Visual exposure	**High exposure**	**Dominant or clearly noticeable**

Criteria	Rating	Description
	Moderate exposure	Recognisable to the viewer
	Low exposure	Not particularly noticeable to the viewer
Visual sensitivity of the area	**High visual sensitivity**	**Highly visible and potentially sensitive areas in the landscape**
	Moderate visual sensitivity	Moderately visible areas in the landscape
	Low visual sensitivity	Minimally visible areas in the landscape
Visual sensitivity of receptors	**High sensitivity**	**Residential areas, nature reserves and scenic routes or trails**
	Moderate sensitivity	Sporting or recreational areas, or places of work
	Low sensitivity	Industrial, mining or degraded areas
Visual absorption capacity (VAC)	High VAC	Effective screening by topography and vegetation
	Moderate VAC	**Partial screening by topography and vegetation**
	Low VAC	Little screening by topography or vegetation
Visual intrusion	**High visual intrusion**	**Results in a noticeable change or is discordant with the surroundings**
	Moderate visual intrusion	Partially fits into the surroundings, but clearly noticeable
	Low visual intrusion	Minimal change or blends in well with the surroundings

7.1 Visibility of the Project

The visibility of the project refers to the viewshed area (the area from which the project will be visible) and is also related to the number of receptors affected (Oberholzer, 2005). The Dalyshope Project will have **high visibility** as it will be visible from a large area (cumulative viewshed of 1 061.08 km^2), with numerous visual receptors.

7.2 Visual Exposure

Visual exposure is “based on the distance from the infrastructure area to selected viewpoints” and “tends to diminish exponentially with distance” (Oberholzer, 2005). The Project has a **high exposure** as it will be clearly recognisable in the landscape and noticeable to receptors within the viewshed area. This is due to the large area covered by the project and height of the stockpiles and dumps.

7.3 Visual Sensitivity of the Area

The visual sensitivity of the area refers to “the inherent visibility of the landscape, usually determined by a combination of topography, landform, vegetation cover and settlement pattern” (Oberholzer, 2005). The receiving environment of the Dalyshope Project has a **high visual sensitivity** as even though the vegetation is expected to provide some form of screening of the proposed infrastructure, it will be highly sensitive to the undisturbed natural landscape.

7.4 Visual Sensitivity of Receptors

The visual sensitivity of receptors is dependent on the nature of the receptors (Oberholzer, 2005). Receptors in residential areas or nature reserves have a high sensitivity, while receptors in industrial or mining areas have a low sensitivity. The identified receptors (roads, farm residences and game lodges) of the proposed Dalyshope Project have a **high sensitivity** as they are situated in scenic areas.

7.5 Visual Absorption Capacity

The Visual Absorption Capacity (VAC) refers to “the potential of the landscape to conceal the proposed project” (Oberholzer, 2005). The receiving environment of the Dalyshope Project has a **moderate VAC** because although there is partial screening provided by the vegetation, this is not sufficient to conceal the project effectively. Figure 8-1 illustrates the VAC of the Bushveld vegetation in the receiving environment and its ability to screen infrastructure.

7.6 Visual Intrusion

The visual intrusion of the project refers to “the level of compatibility or congruence of the project with the particular qualities of the area, or its sense of place”. Visual intrusion is “related to the idea of context and maintaining the integrity of the landscape or townscape” (Oberholzer, 2005). The Dalyshope Project has a **high visual intrusion** as it results in a noticeable change and its discordant with the surroundings.

8 Impact Assessment

8.1 Impact Assessment Methodology

Impacts and risks have been identified based on a description of the activities to be undertaken. Once impacts have been identified, a numerical environmental significance rating process will be undertaken that utilises the probability of an event occurring and the severity of the impact as factors to determine the significance of a particular environmental impact.

Figure 8-1: VAC of the Bushveld Vegetation Screening the Discard Dump at Medupi Power Station

The severity of an impact is determined by taking the spatial extent, the duration and the severity of the impacts into consideration. The probability of an impact is then determined by the frequency at which the activity takes place or is likely to take place and by how often the type of impact in question has taken place in similar circumstances.

Following the identification and significance ratings of potential impacts, mitigation and management measures will be incorporated into the EIA.

Details of the impact assessment methodology used to determine the significance of physical, bio-physical and socio-economic impacts are provided below.

The significance rating process follows the established impact/risk assessment formula:

Significance = Consequence x Probability x Nature

Where

Consequence = Intensity + Extent + Duration

And

Probability = Likelihood of an impact occurring

And

Nature = Positive (+1) or negative (-1) impact

Note: In the formula for calculating consequence, the type of impact is multiplied by +1 for positive impacts and -1 for negative impacts.

The matrix calculates the rating out of 147, whereby intensity, extent, duration and probability are each rated out of seven as indicated in Table 8-1. The weight assigned to the various parameters is then multiplied by +1 for positive and -1 for negative impacts.

Impacts are rated prior to mitigation and again after consideration of the mitigation has been applied; post-mitigation is referred to as the residual impact. The significance of an impact is determined and categorised into one of seven categories (Table 8-2). The descriptions of the significance ratings are presented in Table 8-3.

It is important to note that the pre-mitigation rating takes into consideration the activity as proposed, (i.e., there may already be some mitigation included in the engineering design). If the specialist determines the potential impact is still too high, additional mitigation measures are proposed.

Table 8-1: Impact Assessment Parameter Ratings

Rating	Intensity/ Replaceability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	Positive Impacts (Nature = +1)			
7	Irreplaceable loss or damage to biological or physical resources or highly sensitive environments. Irreplaceable damage to highly sensitive cultural/social resources.	Noticeable, on-going natural and/or social benefits which have improved the overall conditions of the baseline.	International The effect will occur across international borders.	Permanent The impact is irreversible, even with management, and will remain after the life of the project.	Definite There are sound scientific reasons to expect that the impact will definitely occur. > 80% probability
6	Irreplaceable loss or damage to biological or physical resources or moderate to highly sensitive environments. Irreplaceable damage to cultural/social resources of moderate to high sensitivity.	Great improvement to the overall conditions of a large percentage of the baseline.	National Will affect the entire country.	Beyond Project Life The impact will remain for some time after the life of the project and is potentially irreversible even with management.	Almost Certain/Highly Probable It is most likely that the impact will occur. < 80% probability
5	Serious loss and/or damage to biological or physical resources or highly sensitive environments, limiting ecosystem function. Very serious widespread social impacts. Irreparable damage to highly valued items.	On-going and widespread benefits to local communities and natural features of the landscape.	Province/Region Will affect the entire province of region.	Project Life (> 15 years) The impact will cease after the operational life span of the project and can be reversed with sufficient management.	Likely The impact may occur. < 65% probability
4	Serious loss and/or damage to biological or physical resources or moderately sensitive environments, limiting ecosystem function. On-going serious social issues. Significant damage to structures/items of cultural significance.	Average to intense natural and/or social benefits to some elements of the baseline.	Municipal Area Will affect the whole municipal area.	Long Term 6-15 years and the impact can be reversed with management.	Probable Has occurred here or elsewhere and could therefore occur. < 50% probability

Rating	Intensity/ Replaceability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	**Positive Impacts (Nature = +1)**			
3	Moderate loss and/or damage to biological or physical resources or low to moderately sensitive environments, limiting ecosystem function. On-going social issues. Damage to items of cultural significance.	Average, on-going positive benefits, not widespread but felt by some elements of the baseline.	Local Local extending only as far as the development site area.	Medium Term 1-5 years and the impact can be reversed with minimal management.	Unlikely Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur. < 25% probability
2	Minor loss and/or effects to biological or physical resources or low sensitive environments, not affecting ecosystem functioning. Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected.	Low positive impacts experienced by a small percentage of the baseline.	Limited Limited to the site and its immediate surroundings.	Short Term Less than 1 year and is reversible.	Rare/Improbable Conceivable, but only in extreme circumstances. The possibility of the impact materialising is very low as a result of design, historic experience or implementation of adequate mitigation measures. < 10% probability
1	Minimal to no loss and/or effect to biological or physical resources, not affecting ecosystem functioning. Minimal social impacts, low-level repairable damage to common place structures.	Some low-level natural and/or social benefits felt by a very small percentage of the baseline.	Site Specific Limited to specific isolated parts of the site.	Immediate Less than 1 month and is completely reversible without management.	Highly Unlikely/None Expected never to happen. < 1% probability

Table 8-2: Probability/Consequence Matrix

Probability		Significance																																					
	7	-147	-140	-133	-126	-119	-112	-105	-98	-91	-84	-77	-70	-63	-56	-49	-42	-35	-28	-21	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147
	6	-126	-120	-114	-108	-102	-96	-90	-84	-78	-72	-66	-60	-54	-48	-42	-36	-30	-24	-18	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126
	5	-105	-100	-95	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105
	4	-84	-80	-76	-72	-68	-64	-60	-56	-52	-48	-44	-40	-36	-32	-28	-24	-20	-16	-12	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84
	3	-63	-60	-57	-54	-51	-48	-45	-42	-39	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63
	2	-42	-40	-38	-36	-34	-32	-30	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
	1	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
		-21	**-20**	**-19**	**-18**	**-17**	**-16**	**-15**	**-14**	**-13**	**-12**	**-11**	**-10**	**-9**	**-8**	**-7**	**-6**	**-5**	**-4**	**-3**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**
Consequence																																							

Table 8-3: Significance Rating Description

Score	Description	Rating
109 to 147	A very beneficial impact which may be sufficient by itself to justify implementation of the project. The impact may result in permanent positive change.	Major (positive) (+)
73 to 108	A beneficial impact which may help to justify the implementation of the project. These impacts would be considered by society as constituting a major and usually a long-term positive change to the (natural and/or social) environment.	Major (positive) (+)
36 to 72	A positive impact. These impacts will usually result in positive medium to long term effects on the natural and/or social environment.	Minor (positive) (+)
3 to 35	A small positive impact. The impact will result in medium to short term effects on the natural and/or social environment.	Negligible (positive) (+)
-3 to -35	An acceptable negative impact for which mitigation is desirable. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in negative medium to short term effects on the natural and/or social environment.	Negligible (negative) (-)
-36 to -72	A minor negative impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in negative medium to long term effects on the natural and/or social environment.	Minor (negative) (-)
-73 to -108	A moderate negative impact which may prevent the implementation of the project. These impacts would be considered as constituting a major and usually a long-term change to the (natural and/or social) environment and result in severe changes.	Moderate (negative) (-)
-109 to -147	A major negative impact which may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects. The impacts are likely to be irreversible and/or irreplaceable.	Major (negative) (-)

8.2 Identification of Project Activities

Table 8-4 below, provides the project activities per phase to be considered as part of the VIA.

Table 8-4: Project Phases and Associated Activities

Project Phase	Project Activity
Construction Phase	Site / vegetation clearance
	Infrastructure construction
	Topsoil stockpiling
Operational Phase	Open pit establishment
	Removal of rock (blasting)
	Establishment and operation of stockpiling infrastructure (such as rock dumps, soft dumps, soils, ROM, product, discard dump)
	Diesel storage and explosives magazine
	Operation of the open pit workings
	Operating crush and screen and coal washing plant
	Operating sewage treatment plant and water treatment plant
	Backfilling and concurrent rehabilitation;
	Coal transportation through trucking, rail and conveyer belts;
	Storage, handling and treatment of hazardous products (including fuel, explosives and oil) and waste
	Maintenance activities – through the operations maintenance will need to be undertaken to ensure that all infrastructure is operating optimally and does not pose a threat to human or environmental health. Maintenance will include haul roads, crushing and washing plant, machinery, water and stormwater management infrastructure, stockpile areas, dumps, etc.
Decommissioning Phase	Demolition and removal of infrastructure – once mining activities have been concluded infrastructure will be demolished in preparation of the disturbed land rehabilitated
	Rehabilitation – rehabilitation mainly consists of spreading of the preserved subsoil and topsoil, profiling of the land and re-vegetation
	Post-closure monitoring and rehabilitation

8.3 Visual Impact Assessment

The project development will be rated according to the visual impact they will have on the receiving environment, i.e. the environment before potential development. Negative visual impacts decrease the visual character of the pre-development environment. Neutral visual impacts assist to minimise the negative visual impacts of a development but do not result in a positive visual impact. A positive visual impact only occurs when an area is rehabilitated to a state that is better than the state of the pre-development environment, e.g. an infrastructure project area on previously agricultural land is rehabilitated to an area of natural vegetation and all visible signs of agriculture and infrastructure are removed. Positive visual impacts may only occur during the decommissioning and closure phase.

8.3.1 Construction Phase

The construction phase is characterised by site development and infrastructure construction. This includes site clearing, vegetation removal, topsoil removal and stockpiling and the construction of infrastructure. The establishment of infrastructure and the related site clearing, construction activities and the stockpiling of the removed topsoil will draw attention to the project area making receptors aware of the project. The construction phase will have negative visual impacts on the receiving environment.

8.3.1.1 Site / Vegetation Clearance

Site / vegetation clearing includes the removal of topsoil and vegetation and is expected to have a negative visual impact on the receiving environment. The interactions and resultant impacts of site / vegetation clearance are indicated in Table 8-5.

Table 8-5: Interactions and Impacts of Site / Vegetation Clearance

Interaction	Impact
Site clearing and vegetation removal	Site clearing and vegetation removal will have a negative visual impact on the receiving environment. The project area will become noticeable to nearby receptors as it will contrast the surrounding areas. Also, vegetation clearance will reduce the screening properties that the natural vegetation has on the environment.

8.3.1.1.1 Impact Description

Site / vegetation clearance will have a moderate negative visual impact on sensitive receptors and the receiving environment.

8.3.1.1.2 Management Objectives

The management objective is to minimise the negative visual impacts caused by site and vegetation clearance.

8.3.1.1.3 Management Actions

The following management actions are required for site / vegetation clearance:

- Only remove vegetation within the infrastructure footprint areas; and
- Limit the footprint area of surface infrastructure where possible.

8.3.1.1.4 Impact Ratings

The impact ratings and mitigation/management actions for site / vegetation clearance are summarised in Table 8-6 below.

Table 8-6: Potential Impacts of Site / Vegetation Clearance

IMPACT DESCRIPTION: Potential Impacts of Site / Vegetation Clearance				
Dimension	**Rating**	**Motivation**	**Significance**	
PRE-MITIGATION				
Duration	Project Life (5)	The impact will occur during the construction phase which is expected to last approximately one year and remain for the duration of the project.	Consequence: Moderately detrimental (-11)	Significance: Moderate - negative (-77)
Extent	Limited (2)	Site clearing activities will be limited to the development site.		
Intensity x type of impact	Low - negative (-4)	Site clearing is expected to cause a serious visual disturbance. The natural vegetation will be cleared to make way for the project. The project area will become noticeable to the nearby receptors as it will contrast the surrounding areas.		
Probability	Definite (7)	The impact will definitely occur.		
MITIGATION:				
• Only remove vegetation within the infrastructure footprint areas; and • Limit the footprint area of surface infrastructure where possible.				
POST-MITIGATION				
Duration	Project Life (5)	The impact will occur during the construction phase which is expected to last approximately one year and remain for the duration of the project.	Consequence: Moderately detrimental (-9)	Significance: Minor - negative (-63)
Extent	Site Specific (1)	The extent of the impact will be reduced by implementing the mitigation actions listed above.		
Intensity x type of impact	Low - negative (-3)	The visual disturbance will be reduced by implementing the mitigation measures above.		
Probability	Definite (7)	The impact will definitely occur.		

8.3.1.2 Infrastructure Construction

The construction of surface infrastructure will add features to the topography thereby changing it. This surface infrastructure includes PCDs, contractors laydown yard, diesel storage area, explosives magazine, conveyors, crushing and screening plant, office block, water storage and water treatment facilities, fire water and potable water tanks, access and haul roads as well as other infrastructure as listed in Section 1.1.2 and illustrated in Figure 1-2. This will have a moderate negative visual impact on the receiving environment. The interactions and resultant impacts of construction of mine related infrastructure are indicated in Table 8-7.

Table 8-7: Interactions and Impacts of Infrastructure Construction

Interaction	Impact
Infrastructure construction	The construction of surface infrastructure will have a negative visual impact on the receiving environment. The surface infrastructure will change the sense of place of the project area from an undisturbed natural bushveld sense of place to a mining sense of place. This change in landscape and land use will be visible from a distance of up to 20 km and will draw attention to the project area.

8.3.1.2.1 Impact Description

Infrastructure construction will have a moderate negative visual impact on the receiving environment.

8.3.1.2.2 Management Objectives

The management objective is to minimise the negative visual impacts caused by infrastructure construction.

8.3.1.2.3 Management Actions

The following management actions are required for infrastructure construction:

- Ensure that the surface infrastructure does not exceed the proposed heights (Table 5-1);
- Limit the footprint area of surface infrastructure where possible;
- Only remove vegetation within the infrastructure footprint areas;
- Plant trees and plants along the fence line to assist in screening the surface infrastructure; and
- Revegetate after construction phase to assist in screening the surface infrastructure.

8.3.1.2.4 Impact Ratings

The impact ratings and mitigation/management actions for infrastructure construction are summarised in Table 8-8 below.

Table 8-8: Potential Impacts of Infrastructure Construction

IMPACT DESCRIPTION: Potential Impacts of Infrastructure Construction on the Receiving Environment				
Dimension	**Rating**	**Motivation**	**Significance**	
PRE-MITIGATION				
Duration	Project Life (5)	The impact will occur during the construction phase which is expected to last approximately one year and remain for the duration of the project.	Consequence: Highly detrimental (-13)	Significance: Moderate - negative (-91)
Extent	Municipal area (4)	The impact will be visible to the project area and surrounding areas for the viewshed area of 20km.		
Intensity x type of impact	Low - negative (-4)	Construction of infrastructure will have a moderate visual disturbance		
Probability	Definite (7)	The impact will definitely occur.		
MITIGATION:				
• Ensure that the surface infrastructure does not exceed the proposed heights; • Limit the footprint area of surface infrastructure where possible; • Only remove vegetation within the infrastructure footprint areas; • Plant trees and plants along the fence line to assist in screening the surface infrastructure; and • Revegetate after construction phase to assist in screening the surface infrastructure.				
POST-MITIGATION				
Duration	Project Life (5)	The impact will occur during the construction phase which is expected to last approximately one year and remain for the duration of the project. The impact can be limited if revegetation can occur in areas where there is no longer surface infrastructure.	Consequence: Moderately detrimental (-11)	Significance: Moderate - negative (-77)

IMPACT DESCRIPTION: Potential Impacts of Infrastructure Construction on the Receiving Environment				
Dimension	**Rating**	**Motivation**	**Significance**	
Extent	Municipal area (4)	The extent of the impact will be reduced by implementing the mitigation actions listed above.		
Intensity x type of impact	Low - negative (-2)	The visual disturbance will be reduced by implementing the mitigation measures above.		
Probability	Definite (7)	The impact will definitely occur.		

8.3.1.3 Topsoil Stockpiling

The stockpiling of topsoil will have a moderate negative visual impact on the receiving environment. The interactions and resultant impacts of topsoil stockpiling are indicated in Table 8-9.

Table 8-9: Interactions and Impacts of Topsoil Stockpiling

Interaction	**Impact**
Topsoil stockpiling	Topsoil removal and stockpiling will have a negative visual impact on the receiving environment considering the proposed footprint size as well as the proposed height of 30 m for the two topsoil stockpiles. The presence of this infrastructure will change the topography and land use of the receiving environment. The dust from the stockpiles will also have a negative visual impact.

8.3.1.3.1 Impact Description

Topsoil stockpiling will have a moderate negative visual impact on the receiving environment.

8.3.1.3.2 Management Objective

The management objective is to minimise the negative visual impacts caused by topsoil stockpiling.

8.3.1.3.3 Management Actions

The following management actions are required for topsoil stockpiling:

- Limit the footprint area of topsoil stockpiles where possible;
- Limit the height of topsoil stockpiles to 20 m to prevent negative visual impacts, if possible;

- Topsoil stockpiles must be shaped and contoured to prevent erosion and slope failure;
- Vegetate the topsoil stockpiles as soon as possible to blend into the surrounding landscape and reduce dust generation; and
- Apply dust suppression techniques to limit dust generated from topsoil stockpiles.

8.3.1.3.4 Impact Ratings

The impact ratings and mitigation/management actions for site clearing are summarised in Table 8-10 below.

Table 8-10: Potential Impacts of Topsoil Stockpiling

IMPACT DESCRIPTION: Potential Impacts of Topsoil Stockpiling on the Receiving Environment				
Dimension	**Rating**	**Motivation**	**Significance**	
PRE-MITIGATION				
Duration	Project Life (5)	The impact will occur during the construction phase which is expected to last approximately one year and remain for the duration of the project.	Consequence: Highly detrimental (-14)	Significance: Moderate - negative (-98)
Extent	Municipal Area (4)	The impact will be visible to the project area and surrounding areas for the viewshed area of 20 km.		
Intensity x type of impact	High - negative (-5)	The stockpiling will have a negative high visual disturbance on surrounding receptors. It will become very noticeable to receptors as it will contrast with the surrounding landscape. Dust from the stockpiles will have a negative visual impact on the receiving environment.		
Probability	Definite (7)	The impact will definitely occur.		
MITIGATION:				
• Limit the footprint area of topsoil stockpiles where possible; • Limit the height of topsoil stockpiles to 20 m to prevent negative visual impacts, if possible; • Topsoil stockpiles must be shaped and contoured to prevent ponding and to prevent erosion and slope failure; • Vegetate the topsoil stockpiles as soon as possible to blend into the surrounding landscape and reduce dust generation; and				

IMPACT DESCRIPTION: Potential Impacts of Topsoil Stockpiling on the Receiving Environment				
Dimension	**Rating**	**Motivation**	**Significance**	
• Apply dust suppression techniques to limit dust generated from topsoil stockpiles.				
POST-MITIGATION				
Duration	Project Life (5)	The impact will occur during the construction phase which is expected to last approximately one year and remain for the duration of the Project.	Consequence: Moderately detrimental (-11)	Significance: Moderate - negative (-77)
Extent	Local (3)	The extent of the impact will be reduced by implementing the mitigation actions listed above.		
Intensity x type of impact	Low - negative (-3)	The visual disturbance will be reduced by implementing the mitigation measures above.		
Probability	Definite (7)	The impact will definitely occur.		

8.3.2 Operational Phase

The operational phase is characterised by mining and processing activities, maintenance activities, and backfilling and concurrent rehabilitation. This phase will have both negative and neutral visual impacts to receptors; however, the negative impacts far outweigh the neutral impacts. Overburden and discard stockpiles and dumps will have a high negative impact on the topography. The maintenance activities will have a moderate negative impact on the topography. The most significant impact during the operational phase is the mining activities, specifically opencast strip mining. The resultant opencast pit will have a permanent and irreversible negative impact on the topography if there is insufficient material for backfilling. Concurrent backfilling and rehabilitation by filling the void with overburden and rehabilitating and revegetating disturbed areas with topsoil will have a moderate neutral impact on the topography. It is a step in the right direction but will not significantly affect the overall negative impact of opencast mining.

8.3.2.1 Open Pit Establishment

The establishment of the open cast pit is expected to have a negative visual impact on the receiving environment. The interactions and resultant impacts of open pit establishment are indicated in Table 8-11.

Table 8-11: Interactions and Impacts of Open Pit Establishment

Interaction	Impact
Open Pit Establishment	The establishment of an open pit will have a negative visual impact on the receiving environment. Blasting to remove rock will result in noise and dust thereby attracting attention to the project area. The open pit will dramatically contrast with the surrounding area as it will result in a scar on the landscape. Once coal is removed from the open pit, backfilling needs to occur to prevent a permanent and irreversible negative visual impact on the receiving environment.

8.3.2.1.1 Impact Description

The establishment of an open pit will have a moderate negative visual impact on the receiving environment.

8.3.2.1.2 Management Objective

The management objective is to minimise the negative visual impacts caused by the establishment of an open pit

8.3.2.1.3 Management Actions

The following management actions are required for open pit establishment:

- Apply dust suppression techniques to limit the dust generated from the blasting;
- Construct a berm along the perimeter of the open pit;
- Ensure that the open pit is completely backfilled upon closure of the mine with material from the overburden stockpiles;
- Rehabilitate all disturbed areas;
- Ensure that the rehabilitated area is contoured and profiled to create a free-draining topography;
- Spread topsoil over the rehabilitated area;
- Revegetate the rehabilitated areas with grasses; and
- Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.

8.3.2.1.4 Impact Ratings

The impact ratings and mitigation/management actions for open pit establishment are summarised in Table 8-12.

Table 8-12: Potential Impacts of Open Pit Establishment

IMPACT DESCRIPTION: Potential Impacts of Open Pit Establishment				
Dimension	**Rating**	**Motivation**	**Significance**	
PRE-MITIGATION				
Duration	Permanent (7)	The open pit will have a negative visual impact on the receiving environment. Once coal is removed from the open pit, the void will need to be backfilled completely to prevent a permanent and irreversible impact.	Consequence: Highly detrimental (-15)	Significance: Moderate - negative (-105)
Extent	Site Specific (1)	The impact will be visible to the project area and a few receptors only as the impact will be below the ground level.		
Intensity x type of impact	High irreplaceable – negative (-7)	The open pit will result in a permanent and irreversible negative visual impact on the receiving environment if there is no visual barrier to reduce visual exposure.		
Probability	Definite (7)	The impact will definitely occur.		
MITIGATION:				
• Apply dust suppression techniques to limit the dust generated from the blasting; • Construct a berm along the perimeter of the open pit; • Ensure that the open pit is completely backfilled with material from the overburden stockpiles; • Rehabilitate all disturbed areas; • Ensure that the rehabilitated area is re-contoured and profiled to create a free-draining topography; • Spread topsoil over the rehabilitated area; • Revegetate the rehabilitated areas with grasses; and • Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.				
POST-MITIGATION				
Duration	Project Life (5)	Once coal is removed from the open pit, there will be material to backfill the open pit completely.	Consequence: Moderate	Significance: Minor - negative (-70)

IMPACT DESCRIPTION: Potential Impacts of Open Pit Establishment				
Dimension	**Rating**	**Motivation**	**Significance**	
Extent	Site Specific (1)	The extent of the impact will be reduced by implementing the mitigation actions listed above.	detrimental (-10)	
Intensity x type of impact	Low – negative (-4)	The visual disturbance will be reduced by implementing the mitigation measures above.		
Probability	Definite (7)	The impact will definitely occur.		

8.3.2.2 Removal of Rock (Blasting)

The removal of rock will take place within the open pit. The negative visual impact of the open pit was assessed under Open Pit Establishment (Section 8.3.2.1) and the removal of rock is not expected to result in any additional visual impacts.

8.3.2.3 Establishment and Operation of Stockpiling Infrastructure

Establishment and operation of stockpiling infrastructure is expected to have a negative visual impact on the receiving environment. The interactions and resultant impacts of establishment and operation of stockpiling infrastructure are indicated in Table 8-13.

Table 8-13: Interactions and Impacts of Establishment and Operation of Stockpiling Infrastructure

Interaction	Impact
Establishment and Operation of Stockpiling Infrastructure	Stockpiling of overburden, product and discard (excluding topsoil as already assessed in Section 8.3.1.3) will have a negative visual impact on the receiving environment considering the height and footprint areas of the infrastructure. Dust from the stockpiles will also have a negative visual impact. The impact of the stockpiles will become visible from a greater distance as the increase in height and footprint size will begin to dominate the landscape for nearby receptors.

8.3.2.3.1 Impact Description

Establishment and operation of stockpiling infrastructure (including overburden, product and discard dump) will have a moderate negative visual impact on the receiving environment.

8.3.2.3.2 Management Objective

The management objective is to minimise the negative visual impacts caused by the establishment and operation of stockpiling infrastructure.

8.3.2.3.3 Management Actions

The following management actions are required for the establishment and operation of stockpiling infrastructure:

- Limit the footprint area of stockpiles where possible;
- Limit the height of the stockpiles to not exceed the proposed heights (Table 5-1);
- Stockpiles must be shaped and contoured to prevent erosion and slope failure; and
- Apply dust suppression techniques to limit dust generated from the stockpiles.

8.3.2.3.4 Impact Ratings

The impact ratings and mitigation/management actions for the establishment and operation of stockpiling infrastructure are summarised in Table 8-14.

Table 8-14: Potential Impacts of the Establishment and Operation of Stockpiling Infrastructure

IMPACT DESCRIPTION: Potential Impacts of the Establishment and Operation of Stockpiling Infrastructure				
Dimension	**Rating**	**Motivation**	**Significance**	
PRE-MITIGATION				
Duration	Project Life (5)	The impact will occur for the duration of the project.	Consequence: Highly detrimental (-14)	Significance: Moderate - negative (-98)
Extent	Municipal Area (4)	The impact will be visible to the project area and surrounding areas for the viewshed area of 20 km.		
Intensity x type of impact	High - negative (-5)	The stockpiling will have a negative high visual disturbance on surrounding receptors. Dust from the stockpiles will have a negative visual impact on the receiving environment. The stockpiles will become visible from a greater distance as they increase in height and size and will begin to dominate the landscape and will become very noticeable to receptors as it will contrast with the surrounding landscape.		
Probability	Definite (7)	The impact will definitely occur.		
MITIGATION:				

IMPACT DESCRIPTION: Potential Impacts of the Establishment and Operation of Stockpiling Infrastructure				
Dimension	**Rating**	**Motivation**	**Significance**	
• Limit the footprint area of stockpiles where possible; • Limit the height of the stockpiles to not exceed the proposed heights (Table 5 1); • Stockpiles must be shaped and contoured to facilitate drainage of surface water to prevent ponding and to prevent erosion and slope failure; and • Apply dust suppression techniques to limit dust generated from the stockpiles.				
POST-MITIGATION				
Duration	Project Life (5)	The impact will occur for the duration of the Project.	Consequence: Moderately detrimental (-12)	Significance: Moderate - negative (-84)
Extent	Local (3)	The extent of the impact will be reduced by implementing the mitigation actions listed above.		
Intensity x type of impact	Low - negative (-4)	The visual disturbance will be reduced by implementing the mitigation measures above.		
Probability	Definite (7)	The impact will definitely occur.		

8.3.2.4 Diesel Storage and Explosives Magazine

Diesel storage and the operation of the explosive magazine will take place within the mine infrastructure area. The negative visual impact of the mine infrastructure area was assessed under Infrastructure Construction (Section 8.3.1.2) and the storage of diesel and operating of the explosive magazine is not expected to result in any additional visual impacts.

8.3.2.5 Operation of Open Pit Workings

Workings on the open pit will take place within the open pit. The negative visual impact of the open pit was assessed under Open Pit Establishment (Section 8.3.2.1) and the open pit workings are not expected to result in any additional visual impacts.

8.3.2.6 Operating Crushing, Screening and Coal Washing Plant

Operating the crushing, screening and coal washing plant will take place within the mine infrastructure area. The negative visual impact of the mine infrastructure area was assessed under Infrastructure Construction (Section 8.3.1.2) and the operating of the plant is not expected to result in any additional visual impacts.

8.3.2.7 Operating Sewage Treatment Plant and Water Treatment Plant

Operating the sewage and water treatment plants will take place within the mine infrastructure area. The negative visual impact of the mine infrastructure area was assessed under

Infrastructure Construction (Section 8.3.1.2) and the operating of the sewage and water treatment plants is not expected to result in any additional visual impacts.

8.3.2.8 Backfilling and Concurrent Rehabilitation

Backfilling and concurrent rehabilitation will have a neutral visual impact on the receiving environment. The interactions and resultant impacts of Establishment and operation of stockpiling infrastructure are indicated in Table 8-15.

Table 8-15: Interactions and Impacts of Backfilling and Concurrent Rehabilitation

Interaction	Impact
Backfilling and Concurrent Rehabilitation	Backfilling includes using overburden removed from the open pit to fill the mined-out void and rehabilitating the areas that have been mined out whilst mining in another part of the open pit. Backfilling and concurrent rehabilitation will have a neutral visual impact as it assists to reduce the negative visual impact of mining on the receiving environment. Once backfilling commences, overburden should no longer be added to the overburden stockpiles. Backfilling will have a neutral visual impact as it assists to reduce the negative visual impact of mining on the receiving environment. Once concurrent rehabilitation commences, topsoil stockpiles will reduce in height and footprint size. This will have a neutral visual impact as it assists to reduce the negative visual impact of mining on the receiving environment.

8.3.2.8.1 Impact Description

Backfilling and concurrent rehabilitation will have a moderate neutral visual impact on the receiving environment.

8.3.2.8.2 Management Objective

The management objective is to maximise the moderate neutral visual impacts caused by backfilling and concurrent rehabilitation.

8.3.2.8.3 Management Actions

The following management actions are required for backfilling and concurrent rehabilitation:

- Backfill void with overburden stockpiles;
- Ensure that the open pit is completely backfilled with material from the overburden stockpiles;
- Ensure that the rehabilitated area is re-contoured and profiled to create a free-draining topography;
- Spread sub-soil and topsoil over the backfilled and rehabilitated area;
- Revegetate the backfilled and rehabilitated areas with grasses; and

- Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.

8.3.2.8.4 Impact Ratings

The impact ratings and mitigation/management actions for the establishment and operation of stockpiling infrastructure are summarised in Table 8-16.

Table 8-16: Potential Impacts of Backfilling and Concurrent Rehabilitation

IMPACT DESCRIPTION: Potential Impacts of Backfilling and Concurrent Rehabilitation				
Dimension	**Rating**	**Motivation**	**Significance**	
PRE-MITIGATION				
Duration	Long Term (4)	Backfilling and rehabilitation will occur concurrently with active mining during the LoM.	Consequence: Low - negative (-6)	Significance: Negligible - negative (-30)
Extent	Local (3)	The impact will reduce the visual disturbance to the project area and surrounding areas for as far as 20 km.		
Intensity x type of impact	Low - negative (-1)	Backfilling and rehabilitation will have a low negative visual disturbance.		
Probability	Likely (5)	The impact will likely occur.		
MITIGATION:				
• Backfill void with overburden stockpiles; • Ensure that the open pit is completely backfilled with material from the overburden stockpiles; • Ensure that the rehabilitated area is re-contoured and profiled to create a free-draining topography; • Spread sub-soil and topsoil over the backfilled and rehabilitated area; • Revegetate the backfilled and rehabilitated areas with grasses; and • Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.				
POST-MITIGATION				
Duration	Long Term (4)	Backfilling and rehabilitation will occur concurrently with active mining during the LoM.	Consequence: Low - negative (-5)	Significance: Negligible - negative (-25)
Extent	Limited (2)	The extent of the impact will be reduced by implementing the mitigation actions listed above.		

Intensity x type of impact	Low - positive (+1)	The visual disturbance will be reduced by implementing the mitigation measures above.		
Probability	Likely (5)	It is most likely that the impact will occur.		

8.3.2.9 Coal Transportation Through Trucking, Rail and Conveyor Belts

The transportation of coal product through trucking, rail and conveyor belts is expected to have a moderate visual impact on the receiving environment. The interactions and resultant impacts of use and maintenance of the haul roads are indicated in Table 8-17.

Table 8-17: Interactions and Impacts of Coal Transportation Through Trucking, Rail and Conveyor Belts

Interaction	Impact
Coal Transportation Through Trucking, Rail and Conveyor Belts	Coal transportation via conveyor and haul trucking activity on the haul roads will change the visual character of the area. Dust and heavy traffic from the trucks transporting the coal to the nearest railway line will have a negative visual impact on a greater number of receptors beyond the project area.

8.3.2.9.1 Impact Description

Coal transportation through trucking, rail and conveyor belts will have a moderate neutral visual impact on the receiving environment.

8.3.2.9.2 Management Objective

The management objective is to minimise the visual impacts caused by coal transportation through trucking, rail and conveyor belts.

8.3.2.9.3 Management Actions

The following management actions are required for coal transportation through trucking, rail and conveyor belts:

- Apply dust suppression techniques to limit dust generated from the trucks; and
- Minimise heavy traffic by reducing the frequency of coal transportation schedule and avoid night time use where possible.

8.3.2.9.4 Impact Ratings

The impact ratings and mitigation/management actions for the coal transportation through trucking, rail and conveyor belts are summarised in Table 8-18.

Table 8-18: Potential Impacts of Coal Transportation Through Trucking, Rail and Conveyor Belts

IMPACT DESCRIPTION: Potential Impacts of Coal Transportation Through Trucking, Rail and Conveyor Belts				
Dimension	**Rating**	**Motivation**	**Significance**	
PRE-MITIGATION				
Duration	Project Life (5)	The impact will continue throughout the operation phase.	Consequence: Highly detrimental (-14)	Significance: Moderate - negative (-98)
Extent	Municipal Area (4)	Given the distance to the nearest rail network, the visual impact would extend beyond the project area.		
Intensity x type of impact	Low - negative (-5)	The activity will change the visual character of the area for many receptors beyond the project area.		
Probability	Definite (7)	The impact will definitely occur.		
MITIGATION:				
• Apply dust suppression techniques to limit dust generated from the trucks; and • Minimise heavy traffic by reducing the frequency of coal transportation schedule and avoid night time use where possible.				
POST-MITIGATION				
Duration	Long Term (4)	The impact will continue throughout the operation phase.	Consequence: Moderately detrimental (-11)	Significance: Moderate - negative (-77)
Extent	Municipal Area (4)	The extent of the impact will be reduced by implementing the mitigation actions listed above.		
Intensity x type of impact	Low - negative (-3)	The visual disturbance will be reduced by implementing the mitigation measures above.		
Probability	Definite (7)	It is most likely that the impact will occur.		

8.3.2.10 Storage and Handling of Waste

Storage, handing and treatment of hazardous products (including fuel, explosives and oil) and waste will take place within the mine infrastructure area. The negative visual impact of the mine infrastructure area was assessed under the Infrastructure Construction (Section 8.3.1.2) and the storage, handing and treatment of hazardous products and waste is not expected to result in any additional visual impacts.

8.3.2.11 Maintenance Activities (Stockpile Areas & Dumps)

Maintenance activities of stockpile areas and dumps will take place as part of the establishment and operation of stockpiling infrastructure. The negative visual impact of the stockpiling infrastructure and dumps was assessed under Establishment and Operation of Stockpiling Infrastructure (Section 8.3.2.3) and the maintenance of the stockpile areas and dumps is not expected to result in any additional visual impacts.

8.3.3 Decommissioning Phase

The decommissioning and closure phase is characterised by demolition and removal of infrastructure and rehabilitation of the project area (including spreading of soil, revegetation and profiling or contouring). The decommissioning and closure phase is expected to have negative visual impacts on the receiving environment.

Once coal is removed from the open pit, the void will be backfilled. Should this not occur, the result will be a permanent and irreversible negative visual impact on the receiving environment.

Once rehabilitation is complete and the project area has been re-contoured and profiled to create a free-draining topography, there will be an overall neutral visual impact on the receiving environment.

8.3.3.1 Demolition and Removal of Infrastructure

Demolition and removal of infrastructure is expected to have a minor negative visual impact on the receiving environment. The interactions and resultant impacts of demolition and removal of all infrastructure are indicated in Table 8-19.

Table 8-19: Interactions and Impacts of Demolition and Removal of All Infrastructure

Interaction	Impact
Demolition and Removal of Infrastructure	Demolition and removal of infrastructure will have a negative visual impact on the receiving environment. Dust from the demolition process will also have a negative visual impact. Once the infrastructure is removed and rehabilitation of the disturbed areas is complete, there will be an overall neutral visual impact on the receiving environment.

8.3.3.1.1 Impact Description

Demolition and removal of infrastructure will have a minor negative visual impact on the receiving environment. Once the infrastructure is removed and rehabilitation of the disturbed areas is complete, there will be an overall neutral visual impact on the receiving environment.

8.3.3.1.2 Management Objective

The management objective is to increase the neutral visual impacts caused by demolition and removal of infrastructure.

8.3.3.1.3 Management Actions

The following management actions are required for demolition and removal of infrastructure:

- Apply dust suppression techniques to limit the dust from the demolition area;
- Ensure all infrastructure is demolished and removed from the site;
- Ensure that all rubble is removed from site; and
- Rehabilitate all disturbed areas as detailed in the Closure and Rehabilitation Plan.

8.3.3.1.4 Impact Ratings

The impact ratings and mitigation/management actions for demolition and removal of all infrastructure are summarised in Table 8-20.

Table 8-20: Potential Impacts of Demolition and Removal of Infrastructure

IMPACT DESCRIPTION: Potential Impacts of Demolition and Removal of Infrastructure				
Dimension	**Rating**	**Motivation**	**Significance**	
PRE-MITIGATION				
Duration	Medium Term (3)	The impact will occur during the decommissioning and closure phase which is expected to last for 1-5 years.	Consequence: Minor detriment (-8)	Significance: Minor - negative (-56)
Extent	Local (3)	The impact will be visible to the project area and surrounding areas for as far as 20 km.		
Intensity x type of impact	Low - minor (-2)	Demolition and removal of infrastructure is expected to cause a minor visual disturbance.		
Probability	Definite (7)	The impact will definitely occur.		
MITIGATION:				
• Apply dust suppression techniques to limit the dust from the demolition area; • Ensure all infrastructure is demolished and removed from the site; • Ensure all rubble is removed from site; and • Rehabilitate all disturbed areas as detailed in the Closure and Rehabilitation Plan.				
POST-MITIGATION				
Duration	Medium Term (3)	The impact will cease after the operational life span of the project and can be reversed with sufficient management.	Consequence: Minor detriment (-6)	Significance: Minor - negative (-36)
Extent	Limited (2)	The extent of the impact will be reduced by implementing the mitigation actions listed above.		
Intensity x type of impact	Low - minimal (-1)	The visual disturbance will be reduced by implementing the mitigation measures above.		
Probability	Almost certain / Highly probable (6)	It is most probable that the impact will occur.		

8.3.3.2 Rehabilitation

Rehabilitation is expected to have a negative visual impact on the receiving environment. The interactions and resultant impacts of rehabilitation are indicated in Table 8-21Table 8-21.

Table 8-21: Interactions and Impacts of Rehabilitation

Interaction	Impact
Rehabilitation	Rehabilitation (which includes spreading of soil, revegetation and profiling or contouring) will have a negative visual impact on the receiving environment. Once coal is removed from the open pit, the void will be completely backfilled. Should this not occur, this will result in a permanent and irreversible negative visual impact on the receiving environment. Once the overall rehabilitation process is complete and the project area has re-contoured and profiled to create a free-draining topography, there will be an overall neutral visual impact on the receiving environment.

8.3.3.2.1 Impact Description

Rehabilitation (including spreading of soil, revegetation and profiling or contouring) as well as backfilling the open pit will have a moderate negative visual impact on the receiving environment. Once rehabilitation is complete, there will be an overall neutral visual impact on the receiving environment.

8.3.3.2.2 Management Objective

The management objective is to increase the neutral visual impacts caused by rehabilitation.

8.3.3.2.3 Management Actions

The following management actions are required for rehabilitation:

- Ensure that the open pit is backfilled with material from the overburden stockpiles;
- Rehabilitate all disturbed areas;
- Ensure that the rehabilitated area is re-contoured and profiled to create a free-draining topography;
- Spread topsoil over the rehabilitated area;
- Revegetate the rehabilitated areas with grasses; and
- Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.

8.3.3.2.4 Impact Ratings

The impact ratings and mitigation/management actions for rehabilitation (including spreading of soil, re-vegetation and profiling or contouring) are summarised in Table 8-22.

Table 8-22: Potential Impacts of Rehabilitation

<table>
<tr><th colspan="5">IMPACT DESCRIPTION: Potential Impacts of Rehabilitation</th></tr>
<tr><th>Dimension</th><th>Rating</th><th>Motivation</th><th colspan="2">Significance</th></tr>
<tr><td colspan="5">PRE-MITIGATION</td></tr>
<tr><td>Duration</td><td>Medium Term (3)</td><td>The impact will occur during the decommissioning and closure phase which is expected to last for 1-5 years.</td><td rowspan="3">Consequence: Moderately detriment (-10)</td><td rowspan="4">Significance: Moderate - negative (-70)</td></tr>
<tr><td>Extent</td><td>Local (3)</td><td>The impact will be visible to the project area and surrounding areas for as far as 20 km.</td></tr>
<tr><td>Intensity x type of impact</td><td>Low - negative (-4)</td><td>Rehabilitation is expected to cause a minor visual disturbance.</td></tr>
<tr><td>Probability</td><td>Definite (7)</td><td colspan="2">The impact will definitely occur.</td></tr>
<tr><td colspan="5">MITIGATION:</td></tr>
<tr><td colspan="5">Ensure that the open pit is backfilled with material from the overburden stockpiles;
Rehabilitate all disturbed areas;
Ensure that the rehabilitated area is re-contoured and profiled to create a free-draining topography;
Spread topsoil over the rehabilitated area;
Revegetate the rehabilitated areas with grasses; and
Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.</td></tr>
<tr><td colspan="5">POST-MITIGATION</td></tr>
<tr><td>Duration</td><td>Medium Term (3)</td><td>The impact will occur during the decommissioning and closure phase which is expected to last for 1-5 years.</td><td rowspan="3">Consequence: Moderately detrimental (-8)</td><td rowspan="4">Significance: Minor - negative (-56)</td></tr>
<tr><td>Extent</td><td>Limited (2)</td><td>The extent of the impact will be reduced by implementing the mitigation actions listed above.</td></tr>
<tr><td>Intensity x type of impact</td><td>Low - negative (-3)</td><td>The visual disturbance will be reduced by implementing the mitigation measures above.</td></tr>
<tr><td>Probability</td><td>Definite (7)</td><td colspan="2">It is most likely that the impact will occur.</td></tr>
</table>

8.3.3.3 Post-Closure Monitoring and Rehabilitation

Post-closure rehabilitation will take place in the same area as the rehabilitation during the decommissioning and closure phase of the Dalyshope Project. The negative visual impact of rehabilitation assessed in the Rehabilitation section above (Section 8.3.3.2) and the post-closure monitoring and rehabilitation is not expected to result in any additional visual impacts.

8.4 Cumulative Impacts

The Waterberg Coalfield area is largely undeveloped and is characterised by undisturbed Bushveld vegetation, game farming, hunting, tourism and agriculture. A number of operational mines and power stations are present in the area. These include the Boikarabelo and Grootegeluk Coal Mines situated 10 km southwest and 50 km southeast of the project area respectively and the Medupi and Matimba Power Stations are situated 50 km southeast and 60 km southeast of the project area respectively. These developments have altered the original Bushveld character which has resulted in a loss of scenic quality and sense of place.

It is expected that the numerous future developments as illustrated in Figure 8-2 including that of the proposed Dalyshope project will contribute to the loss of scenic quality and sense of place. However, the mitigation measures proposed for the project will reduce the cumulative impact. Concurrent rehabilitation through backfilling will reduce the visibility of the dumps as the overburden material will be placed back into the pit thereby reducing the height of the dumps. The construction of visual barriers will aid in establishing a visual screening effects to reduce the visibility of the built surface infrastructure and the minimisation of heavy coal trucking traffic through reducing the frequency of coal transportation. Unplanned and Low Risk Events

A number of unplanned and low risks events can be expected for the Dalyshope project that will result in visual impacts. These include:

- Fire – smoke generated from unexpected fires accidents can have a short-term visual impact on the surrounding areas. Mitigation measures such as robust fire management protocols and procedures can reduce this impact;
- Extreme wind erosion event – dust generated from extreme wind erosion events can have a short-term visual impact on the surrounding areas. Mitigation measures such as continuous dust suppression will reduce amount of dust in the project area to be dispersed via wind; and

Water scarcity – in the event that water is unavailable for dust suppression techniques, mitigation measures such as using chemical dust suppression, are effective.

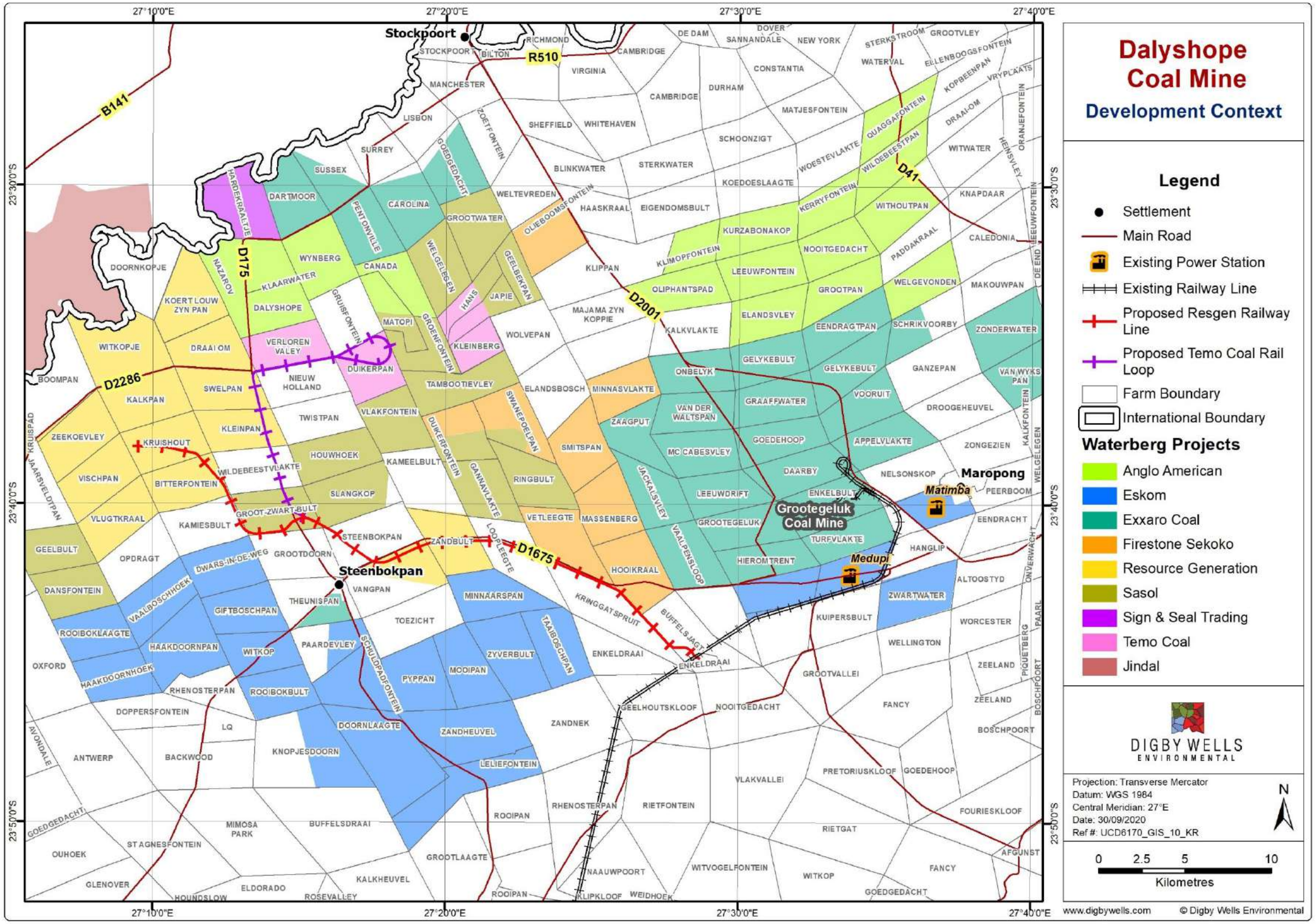

Figure 8-2 : Development Context

9 Environmental Management Plan

The Environmental Management Plan (EMP) has been described according to the project activities in order to provide an understanding of what objectives and recommended management measures are required to minimise the environmental impacts arising from these activities. The management measures are described in Table 9-1.

Table 9-1: Environmental Management Plan

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
Site / Vegetation Clearance	Site / vegetation clearance will reduce the screening properties that the natural vegetation has on the environment making the project more visible to receptors.	Visual	Construction	• Only remove vegetation within the infrastructure footprint areas; and • Limit the footprint area of surface infrastructure where possible	***Remedy*** through revegetation and limiting vegetation clearance to only footprint areas	Construction Phase
Infrastructure Construction	The surface infrastructure will change the sense of place of the project area from an undisturbed natural bushveld to a mining sense of place. This change in landscape and land use will draw attention to the project area.		Construction	• Ensure that the surface infrastructure does not exceed the proposed heights; • Limit the footprint area of surface infrastructure where possible; • Only remove vegetation within the infrastructure footprint areas; • Plant trees and plants along the fence line to assist in screening the surface infrastructure; and • Revegetate after construction phase to assist in screening the surface infrastructure.	***Control*** through creating visual barriers to reduce visual exposure	Throughout LoM
Topsoil Stockpiling	The topsoil stockpile will have a negative visual impact due to the proposed height and footprint size. Dust from the stockpile will also affect receptors.		Construction and Operational	• Limit the footprint area of topsoil stockpiles where possible; • Limit the height of topsoil stockpiles to 20 m to prevent negative visual impacts, if possible; • Topsoil stockpiles must be shaped and contoured to prevent erosion and slope failure; and • Apply dust suppression techniques to limit dust generated from topsoil stockpiles.	***Control*** through creating visual barriers to reduce visual exposure. ***Control*** through dust suppression	Throughout LoM
Open Pit Establishment	Blasting to remove rock will result in noise and dust thereby attracting attention to the project area. The open pit will dramatically contrast with the surrounding area as it will result in a scar on the landscape.		Operational	• Apply dust suppression techniques to limit the dust generated from the blasting; • Construct a berm along the perimeter of the open pit, • Ensure that the open pit is completely backfilled with material from the overburden stockpiles; • Rehabilitate all disturbed areas; • Ensure that the rehabilitated area is contoured and profiled to create a free-draining topography; • Spread topsoil over the rehabilitated area; • Revegetate the rehabilitated areas with grasses; and • Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.	***Control*** through creating visual barriers to reduce visual exposure. ***Control*** through dust suppression	Operational Phase

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
Establishment and Operation of Stockpiling Infrastructure	The overburden, product and discard stockpile will have a negative visual impact due to their proposed height and footprint size. And will dominate the landscape. Dust from the stockpiles will also affect receptors.		Operational	• Limit the footprint area of stockpiles where possible; • Limit the height of the stockpiles to not exceed the proposed heights; • Stockpiles must be shaped and contoured to prevent erosion and slope failure; and • Apply dust suppression techniques to limit dust generated from the stockpiles.	***Control*** through creating visual barriers to reduce visual exposure. ***Control*** through dust suppression	Operational
Backfilling and Concurrent Rehabilitation	The potential impact is a neutral visual impact as it assists to reduce the negative visual impact of mining on the receiving environment		Operational	• Backfill void with overburden stockpiles; • Ensure that the open pit is completely backfilled with material from the overburden stockpiles; • Ensure that the rehabilitated area is re-contoured and profiled to create a free-draining topography; • Spread sub-soil and topsoil over the backfilled and rehabilitated area; • Revegetate the backfilled and rehabilitated areas with grasses; and • Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.	***Remedy*** through rehabilitation	Operational
Coal Transportation Through Trucking, Rail and Conveyer Belts	Dust and heavy traffic in the area will change the visual character of the area.		Operational	• Apply dust suppression techniques to limit dust generated from the trucks; and • Minimise heavy traffic by reducing the frequency of coal transportation schedule and avoid night time use where possible.	***Control*** through dust suppression ***Control*** through traffic management	Operational
Demolition and Removal of Infrastructure	The potential impact is a neutral visual impact as it assists to restore the landscape to its pre-development state.		Decommissioning	• Apply dust suppression techniques to limit the dust from the demolition area; • Ensure all infrastructure is demolished and removed from the site; • Ensure that all rubble is removed from site; and • Rehabilitate all disturbed areas as detailed in the Closure and Rehabilitation Plan.	***Remedy*** through rehabilitation	Decommissioning
Rehabilitation	The potential impact is a neutral visual impact as it assists to restore the landscape to its pre-development state.		Decommissioning	• Ensure that the open pit is backfilled with material from the overburden stockpiles; • Rehabilitate all disturbed areas; • Ensure that the rehabilitated area is re-contoured and profiled to create a free-draining topography; • Spread topsoil over the rehabilitated area; • Revegetate the rehabilitated areas with grasses; and • Ensure all the mitigation/management actions outlined in the Closure and Rehabilitation reports are conducted.	***Remedy*** through rehabilitation	Decommissioning

10 Monitoring Programme

The following monitoring activities should be undertaken on a monthly basis for the life of the Dalyshope Project:

- Dust monitoring and management as per the Air Quality Monitoring Plan (Digby Wells, 2020b);
- Monitoring the vegetation cover to achieve maximum VAC as per the Rehabilitation and Closure Plan (Digby Wells, 2020a); and
- Monitor grievances from visual receptors and address these through a Grievance Mechanism.

11 Comments Received through the Stakeholder Engagement Process

The Stakeholder Engagement Process is currently underway, with comments applicable to the VIA received at the time of the writing included in Table 11-1 below.

Table 11-1: Stakeholder Engagement Comments Received

Category	Comment Raised	Contributor	Organisation/ Community	Date	Method	Response
Visual	How close can the rock dumps come to the fence? We are concerned about dust being blown off of these dumps.	Tharina Pelser	Landowner	16/07/2020	Focus Group Meeting	The dumps are quite close to the fence, but the potential of rock being blown off from the rock dumps is highly unlikely. Measures will be put in place to suppress the emission of dust and other small particles from the dumps.
Visual	What is the long-term plan for the discard dump? And will they use topsoil to cover the dumps?				Focus Group Meeting	The discard will be taken by conveyor belt back to the pit head where it will be loaded into trucks to be deposited back into the bottom of the pit. While it is being stockpiled on site, topsoil will be used to cover the dump.
Socio-economic & Visual (sense of place)	We are concerned that we won't be able to attract foreign hunters to our lodge with a coal mine next door. We rely on international travellers to generate enough income to survive.				Focus Group Meeting	It is understood that the proposed development will have a negative visual impact on the surrounding areas; however, measures and recommendations have been put in place from a visual perspective to ensure that the sense of place is not lost entirely.
Socio-economic & Visual (sense of place)	If the mining area expands, it's better for the mine to buy the farm than to live next to a mine.				Focus Group Meeting	This application only considers the current proposed mining layout and a single open pit with an approximate 30-year LoM. Should the Applicant wish to expand the mining area, a new application and consultation process will need to be undertaken.
Visual	What kind of visual barriers will be in place to prevent neighbouring farms from being exposed to the mine?	Piet Nel	Landowner	17/07/2020	Focus Group Meeting	The following visual barriers have been recommended: • Increased vegetation in areas where there is no infrastructure to assist in the screening of the project; • Topsoil covering and vegetation of stockpiles so it blends in with the surrounding landscape; and • Ensure trees and plants are planted along the fence line to provide visual screening.

12 Recommendations & Reasoned Opinion Whether Project Should Proceed

The proposed Dalyshope Project will result in a change in the landscape from natural Bushveld to mining. Mining involves changing the natural features of and adding man-made features to the natural landscape. Changing the visual aesthetic of an area will cause negative impacts on the other environmental, social and cultural aspects of the receiving environment. The removal of vegetation will result in the loss of the natural screening properties that the natural vegetation has and will therefore reduce its potential to mask the proposed development.

The Dalyshope Project will have a very high visual impact on the receiving environment. The greatest visual impact of the proposed project will be from the opencast pit, and the overburden, topsoil and discard stockpiles due to the proposed height of this infrastructure. These cover a large area, will dramatically change the natural landscape and contrast with its surroundings thereby drawing attention to the Dalyshope Project from a distance of up to 20 km.

It is recommended that the mitigation/management actions in Section 10 are implemented to reduce the impact that the project will have on the topography and visual character of the receiving environment. The visual impacts will occur for the life of the project but can be reversed with sufficient rehabilitation. During the decommissioning and closure phase, all surface infrastructure must be demolished and removed from the site. The open pit must be backfilled with material from the overburden stockpiles. The project area must be re-contoured and profiled to create a free-draining topography to reduce the negative visual impact of mining on the receiving environment. The topsoil stockpiles must be spread over the disturbed areas and these areas must be vegetated to complete the rehabilitation process.

According to the Waterberg District Municipality 2019/2020 Integrated Development Plan, mining activity is the biggest contributor towards the provincial gross domestic product, contributing 24.5% to the province’s economy. Also, jobs in this economic sector have increased form 71,000 in 2013 to 103,000 in 2017/18. With the expected growth of the mining economy, the municipality envisages this sector to attract further investment and job creation.

Based on the findings of this VIA and the economic value that mining has on the provincial economy, it is recommended that the Dalyshope Project can proceed together with the implementation of all the mitigation/management actions stipulated.

13 Conclusion

The receiving environment of the proposed Dalyshope Project has a high visual sensitivity as there are highly visible and potentially sensitive areas in the landscape. The topography of the project area and surrounds is relatively flat and will therefore only provide minimal screening of the proposed development. The receiving environment is characterised by natural Bushveld vegetation with small settlements and isolated farm residences and game lodges.

The theoretical viewshed model is based on the topography only and does not take the screening effect of vegetation into account. This viewshed model depicts the area from which the proposed Dalyshope Project is potentially visible. This viewshed model is limited to a buffer of 20 km around the pit, stockpile and infrastructure areas. The practical viewshed model depicts the area from which the proposed Dalyshope Project is likely to be visible.

Due to the high sensitivity of the receiving environment, the proposed Dalyshope Project is expected to have a high visual impact on the receiving environment. The most important of these is ensuring the vegetation coverage is maintained in order to increase the natural screening effects that that natural bushveld vegetation has in masking proposed developments. This success of this mitigation measure will influence the overall long-term impact of the project on the topography, visual / aesthetic character and the receptors of the receiving environment. The proposed Dalyshope Project can proceed based on the results of the VIA provided that the recommended mitigation measures are implemented.

14 References

Digby Wells, 2014: Topography and Visual Impact Assessment for the Proposed Dalyshope Project.

Digby Wells, 2020a.: Air Quality Impact Assessment. Proposed Dalyshope Coal Mining Project, Situated in the Magisterial District of Lephalale, Limpopo Province.

Digby Wells, 2020b.: Rehabilitation and Closure Plan. Proposed Dalyshope Coal Mining Project, Situated in the Magisterial District of Lephalale, Limpopo Province

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Oberholzer, B. 2005: Guideline for involving visual and aesthetic specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 2005 053 F. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning, Cape Town.

Waterberg District Municipality, 2019/2020: Waterberg District Municipality 2019/2020 Integrated Development Plan.

DIGBY WELLS
ENVIRONMENTAL

Appendix A: Sensitive Receptors

Settlement Name / Number	Latitude	Longitude	Dumps Value	Dumps Rating	Opencast Pit Value	Opencast Pit Rating	Built Infrastructure Value	Built Infrastructure Value
1	23° 41' 43.950" S	27° 17' 02.253" E	7.75879	Low			0	
2	23° 42' 07.715" S	27° 17' 07.073" E	9.40703	Low			9.40703	Low
3	23° 42' 28.637" S	27° 17' 19.446" E	9.00502	Low			9.00502	Low
4	23° 42' 07.587" S	27° 16' 50.524" E	11.4573	Moderate			9.45729	Low
5	23° 42' 15.518" S	27° 16' 35.370" E	11.407	Moderate	11.407	Very Low	11.407	Moderate
6	23° 41' 42.221" S	27° 17' 58.767" E	3.50754	Very Low				
9	23° 40' 03.098" S	27° 16' 31.185" E	11.3668	Moderate			4.36683	Very Low
10	23° 40' 57.299" S	27° 15' 23.087" E						
11	23° 43' 21.789" S	27° 15' 17.741" E	10.603	Moderate	10.603	Very Low	10.603	Moderate
12	23° 43' 47.722" S	27° 14' 48.429" E	10.201	Low			10.201	Moderate
13	23° 42' 31.456" S	27° 11' 07.661" E	7.05528	Low				
14	23° 42' 24.292" S	27° 11' 38.121" E	9.25628	Low				
15	23° 42' 12.512" S	27° 12' 15.250" E	11.5578	Moderate	11.5578	Very Low	9.55779	Low
16	23° 41' 03.012" S	27° 12' 28.895" E	8.66332	Low				
17	23° 42' 12.434" S	27° 13' 20.627" E	11.7085	Moderate	11.7085	Very Low	11.6583	Moderate
18	23° 41' 13.766" S	27° 09' 50.617" E						
19	23° 43' 45.456" S	27° 14' 04.282" E	10.2513	Moderate	10.2513	Very Low	10.2513	Moderate
20	23° 43' 15.893" S	27° 13' 44.929" E	10.7035	Moderate	10.7035	Very Low	10.7035	Moderate
21	23° 43' 11.576" S	27° 12' 54.328" E	10.7538	Moderate	10.7538	Very Low	10.7538	Moderate
28	23° 38' 19.317" S	27° 14' 21.063" E	15.3266	Moderate	15.3266	Moderate	15.3266	Moderate
29	23° 38' 33.862" S	27° 14' 51.746" E	15.0251	Moderate	15.0251	Moderate	15.0251	Moderate
30	23° 39' 05.450" S	27° 11' 03.546" E	14.0201	Moderate	14.0201	Low	12.0201	Moderate
31	23° 38' 57.755" S	27° 09' 35.196" E						
32	23° 39' 33.367" S	27° 09' 37.386" E						
33	23° 41' 54.900" S	27° 08' 44.763" E						
34	23° 42' 18.817" S	27° 09' 45.654" E	6.85427	Very Low				
35	23° 39' 57.914" S	27° 06' 04.350" E	2.75377	Very Low				
38	23° 36' 33.340" S	27° 08' 03.066" E	14.0201	Moderate	14.0201	Low	12.0201	Moderate
39	23° 36' 19.292" S	27° 06' 55.419" E	13.2663	Moderate	13.2663	Low	11.2663	Moderate
40	23° 35' 37.605" S	27° 06' 48.896" E	9.41709	Low			4.41709	Very Low

Settlement Name / Number	Latitude	Longitude	Dumps Value	Dumps Rating	Opencast Pit Value	Opencast Pit Rating	Built Infrastructure Value	Built Infrastructure Value
41	23° 34' 09.032" S	27° 10' 02.295" E	16.4824	High	16.4824	Moderate	14.4824	Moderate
42	23° 33' 38.016" S	27° 09' 46.483" E	14.3317	Moderate	16.3317	Moderate	14.3317	Moderate
43	23° 33' 53.417" S	27° 09' 21.220" E	13.9296	Moderate			12.9296	Moderate
45	23° 30' 34.428" S	27° 15' 13.442" E	17.3869	High	17.3869	Moderate	17.3869	High
46	23° 33' 24.162" S	27° 13' 15.388" E	19.2965	High	19.2965	High	19.2965	High
47	23° 32' 03.192" S	27° 14' 35.998" E	18.8442	High	18.8442	High	18.8442	High
48	23° 31' 11.639" S	27° 16' 16.151" E	17.3367	High	17.3367	Moderate	17.3367	High
49	23° 29' 06.501" S	27° 16' 29.034" E						
50	23° 29' 00.998" S	27° 17' 21.316" E	7.22613	Low				
51	23° 28' 41.431" S	27° 18' 29.450" E	10.3719	Moderate				
52	23° 28' 26.740" S	27° 18' 20.267" E	6.27136	Very Low				
53	23° 27' 52.448" S	27° 18' 29.525" E	9.76884	Low				
54	23° 27' 38.769" S	27° 19' 12.506" E	9.21608	Low				
55	23° 26' 10.066" S	27° 20' 32.376" E	7.45729	Low				
58	23° 28' 45.670" S	27° 21' 17.649" E	10.5628	Moderate			3.56281	Very Low
61	23° 28' 20.034" S	27° 22' 58.048" E	7.15578	Low				
62	23° 31' 06.099" S	27° 22' 42.176" E	8.41206	Low				
63	23° 32' 51.796" S	27° 22' 04.820" E	11.1658	Moderate			12.1658	Moderate
66	23° 32' 34.822" S	27° 24' 37.703" E	9.00502	Low			9.00502	Low
67	23° 34' 56.736" S	27° 24' 11.718" E	9.25628	Low			9.25628	Low
68	23° 36' 56.291" S	27° 23' 54.474" E	8.95477	Low				
69	23° 37' 36.765" S	27° 22' 31.658" E	7.75879	Low				
70	23° 37' 15.338" S	27° 18' 14.184" E	12.8744	Moderate			12.8744	Moderate
71	23° 38' 19.453" S	27° 18' 03.823" E	14.2211	Moderate	14.2211	Moderate	14.2211	Moderate
72	23° 35' 25.313" S	27° 14' 20.541" E	17.99	High	17.99	High	17.99	High
73	23° 35' 11.038" S	27° 20' 31.885" E	12.2211	Moderate				
74	23° 34' 45.275" S	27° 20' 01.887" E	6.72362	Very Low				
75	23° 35' 03.520" S	27° 19' 56.489" E	10.7236	Moderate				
76	23° 35' 08.408" S	27° 19' 05.779" E	13.3769	Moderate			13.3769	Moderate
77	23° 36' 19.139" S	27° 20' 58.720" E	9.46734	Low				

Settlement Name / Number	Latitude	Longitude	Dumps Value	Dumps Rating	Opencast Pit Value	Opencast Pit Rating	Built Infrastructure Value	Built Infrastructure Value
78	23° 38' 12.636" S	27° 20' 17.186" E	9.01508	Low				
79	23° 37' 28.724" S	27° 20' 12.087" E	9.46734	Low				
80	23° 35' 31.787" S	27° 19' 27.953" E						
81	23° 31' 15.377" S	27° 20' 41.343" E	12.0704	Moderate			12.0704	Moderate
Hardekraaltjie	23° 31' 32.503" S	27° 12' 57.585" E	18.191	High	18.191	High	18.191	High
Sandbult	23° 42' 28.840" S	27° 16' 13.107" E	11.2563	Moderate	11.2563	Very Low	11.2563	Moderate