Visual Assessment Scoping Report for the Proposed Pure Source Mining Right Application

Project Number:

PSM002

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1 INTRODUCTION

Hydrospatial (Pty) Ltd (hereafter Hydrospatial) was appointed by Pure Source Minerals Mining Contracting (Pty) Ltd (hereafter the client) to conduct a Visual Impact Assessment (VIA) study for the Pure Source Right Application (MRA) (hereafter the Project). This report provides the VIA input required for the Environmental Impact Assessment (EIA) scoping report.

1.1 Project Location

The Project is located near Vaal Oewer on the southern bank of the Vaal River within Free State Province of South Africa. The Project is located on portions 3, the remaining extent of portion 1, and the remaining extent of the farm Woodlands 407. The location of the Project is indicated on Figure 1-1.

1.2 Project Description

The Project will involve the development of an open pit mine, processing plant and associated infrastructure. Sand, gravel and diamondiferous gravel are proposed to be mined. The proposed mine infrastructure layout plan is indicated on Figure 1-2.

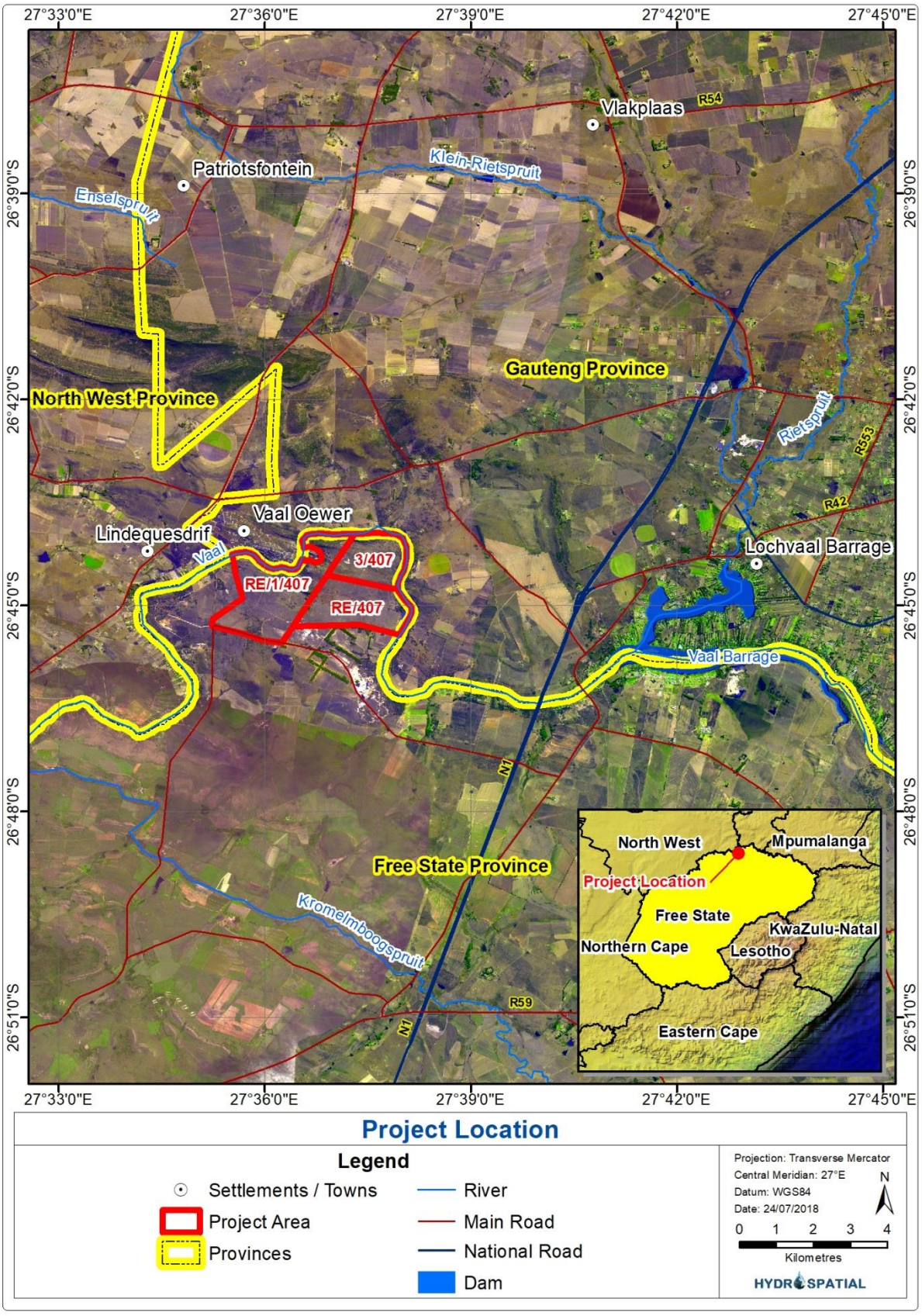

Figure 1-1: Project location

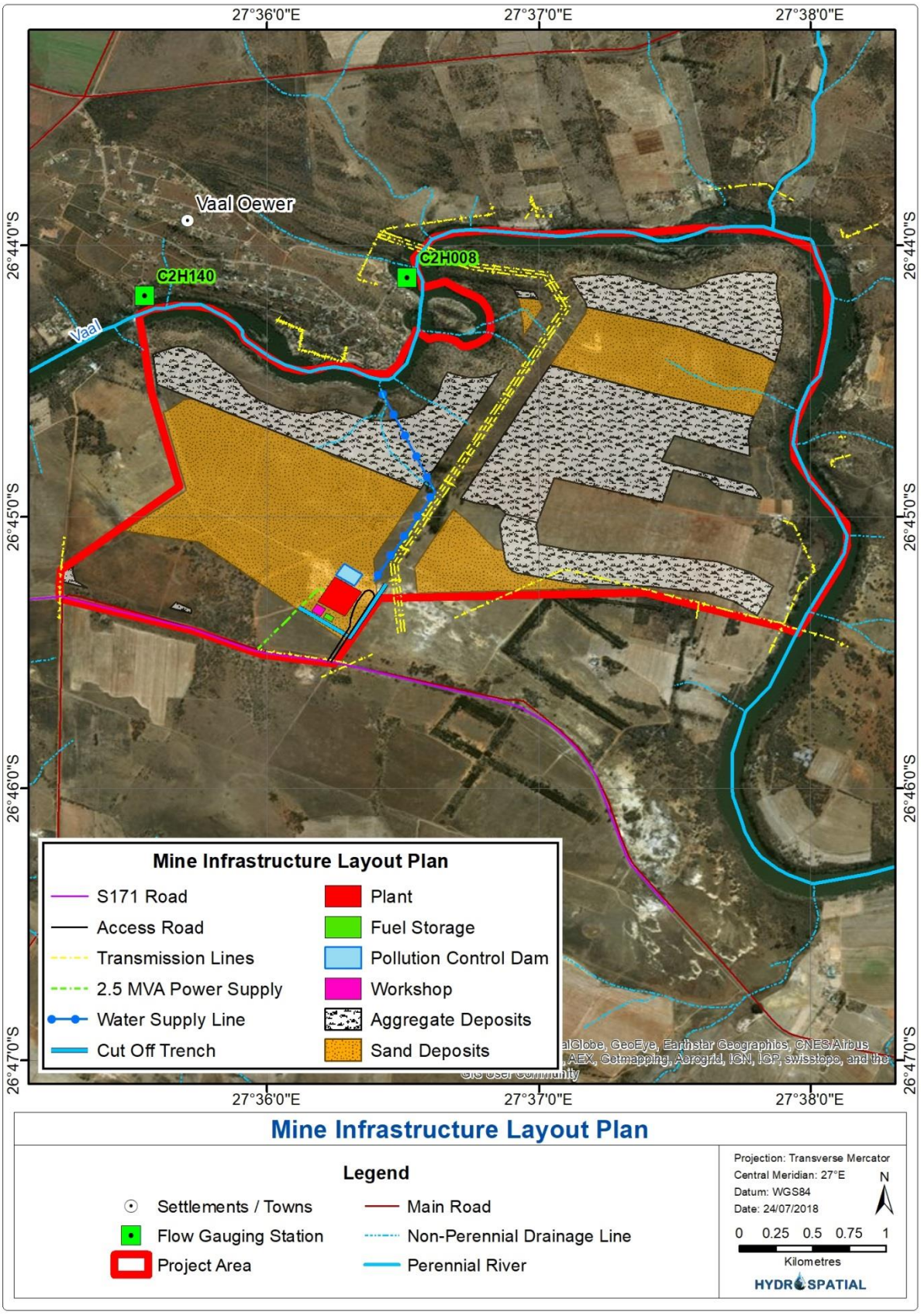

Figure 1-2: Mine infrastructure layout plan

1.3 Legislative Requirements and Guidelines

The following international and national legislative requirements and guidelines are relevant to the VIA study:

1.3.1 International

The European Landscape Convention (ELC) created by the Council of Europe, was the first international convention to focus exclusively on landscapes. The purpose of this convention is to promote effective management and planning of landscapes. It was signed by the United Kingdom government in 2006 and became binding from 2007. Public documents that explore the impacts of large scale developments, as defined in the ELC, on any landscape should take into account the effects of these developments. A landscape means “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors” i.e. the natural, visual and subjectively perceived landscape, (Contesse, 2011; European Landscape Convention, 2007).

There is no regional or local scale legislation pertaining to mining activities and Visual Impact Assessments (VIAs) exclusively but VIAs are relevant to the International Finance Corporation’s (IFC) Performance Standards and this will be treated as a best practice guideline.

IFC Performance Standard 3: Resource Efficiency and Pollution Prevention is applicable to the VIA. Performance Standard 3 recognises that increased economic activity and urbanisation often generate increased levels of pollution to air, water and land, and consume finite resources in a manner that may threaten people and the environment at the local, regional and global levels. For the purposes of this Performance Standard, the term ‘pollution’ is used to refer to both hazardous and non-hazardous chemical pollutants in the solid, liquid, or gaseous phases, and includes other components such as pests, pathogens, thermal discharge to water, GHG emissions, nuisance odours, noise, vibration, radiation, electromagnetic energy and the creation of potential visual impacts including light (IFC, 2012).

The Environmental, Health and Safety Guidelines for Mining therefore need to be considered (World Bank, 2007):

“Mining operations, and in particular surface mining activities, may result in negative visual impacts to resources associated with other landscape uses such as recreation or tourism. Potential contributors to visual impacts include high walls, erosion, discoloured water, haul roads, waste dumps, slurry ponds, abandoned mining equipment and structures, garbage and refuse dumps, open pits, and deforestation. Mining operations should prevent and minimise negative visual impacts through consultation with local communities about potential post-closure land-use, incorporating visual impact assessment into the mine reclamation process. Reclaimed lands should, to the extent feasible, conform to the visual aspects of the surrounding landscape. The reclamation design and procedures should take into consideration the proximity to public viewpoints and the visual impact within the context of the viewing distance. Mitigation measures may include strategic placement of screening

materials including trees and use of appropriate plant species in the reclamation phase as well as modification of the placement of ancillary and access roads."

1.3.2 National

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;
- Section 23(1)(d) of the MPRDA, where it is mentioned that a mining right will be granted if "the mining will not result in unacceptable pollution, ecological degradation or damage to the environment". Visual pollution is a form of environmental pollution and therefore needs to be considered under this section. Holders of rights granted in terms of the MPRDA must at all times give effect to the general objectives of integrated environmental management laid down in Chapter 5 of the NEMA. The Regulations promulgated in terms of the NEMA, with which holders of rights must comply, provide for the assessment and evaluation of potential impacts, and the setting of management plans to mitigate such impacts.
- 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 SCOPE OF WORK

The scope of work for the surface water scoping input included the following:

- Provide a baseline (pre-construction and mining) description of the visual and aesthetic characteristics of the area;
- Provide the preliminary anticipated visual impacts for the Project; and
- Provide the terms of reference for the VIA study for the EIA phase.

3 BASELINE VISUAL AND AESTHETIC ENVIRONMENT

The primary purpose of this section is to provide the baseline (pre-mining) visual and aesthetic characteristics of the area in which the Project is located.

3.1 Topography

The topography of an area in which a project is located, plays an important role in the visibility of a project. For instance, in mountainous areas, a project may be concealed in a valley and not visible to sensitive visual receptors. However, if the project is developed on top of a mountain, or in an open area, it may be visible to many visual receptors. Figure 3-1 demonstrates the role topography in the visibility of a project.

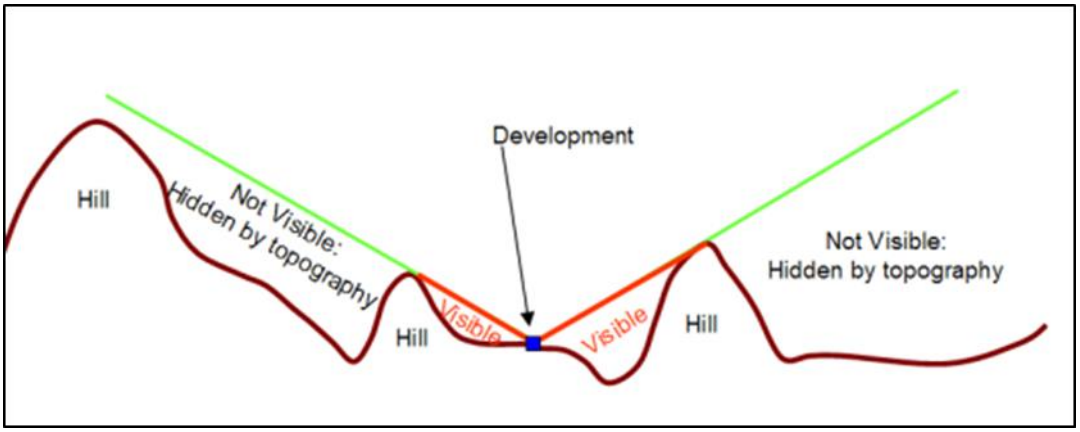

Figure 3-1: The role of topography in the visibility of a project

The topography of the region can be described as undulating. Elevation within the Project area varies from 1 471 metres above mean sea level (mamsl), along an elevated ridge which runs in a north-west to south-east direction through the site, to 1 406 mamsl along the banks of the Vaal River. A smaller ridge that is approximately 5 m in height, is located directly north and runs in the same direction as the above mentioned ridge.

3.2 Land Cover and Use

Similar to topography, the land cover of an area plays an important role in the visibility of a project. Tall dense vegetation can conceal a project from visual receptors, while projects located in open areas consisting of grassland vegetation, are likely to be more visible to receptors.

The land cover of the Project area consists mostly of grassland, with agricultural fields occurring towards the south of the site. Thicker riverine vegetation occurs along the banks of the Vaal River. Directly the north of the Project, a housing development is located at Vaal Oewer on an elevated ridge. A number of further housing developments are located along the Vaal River towards the north-west and west of the Project area. Sand mining activities

are evident directly south, south-east and west of the Project. Beyond the Project area, the dominant land use is crop and livestock agriculture.

3.3 Visual/Landscape Characterisation

From the above description, and within a 5 km radius of the Project area, the region can be broadly divided into three categories:

- Agricultural areas – crop and livestock agriculture are the dominant land use in the area;
- Residential areas – housing developments occur mostly along the Vaal River. Many of these houses are weekend and holiday homes; and
- Sand mining activities.

3.4 Sense of Place

The sense of place can be defined as the character of the place, whether natural, rural or urban, and is largely dependent on the visual and landscape characterisation of an area.

Crop and livestock areas, which dominate the landscape, largely evoke a feeling of a farming area, while the along the Vaal River, where residential houses are located, a tranquil sense of place is evoked. The sand mining areas evoke an open and barren sense of place, which is typically associated with mining activities.

3.5 Visual Receptors

The following visual receptors have been identified within a 5 km radius of the Project area:

- Residential areas, particularly those located along the Vaal River;
- Farm houses; and
- Main roads within the area, particularly the N1 highway.

4 POTENTIAL VISUAL IMPACTS

The preliminary anticipated visual impacts for the construction and operational phases of the Project are indicated in Table 4-1. These impacts will be investigated in further detail during the EIA phase of the Project.

Table 4-1: Anticipated visual impacts

Activity	Impact Description	Significance Pre- Mitigation	Mitigation Measures / Recommendations	Significance Post-Mitigation
Construction Phase				
Removal of vegetation for infrastructure and open pit mining	The removal of vegetation will expose the Project to sensitive visual receptors, particularly those located on elevated areas surrounding the Project. Dust generated during the construction phase is further likely to create a visual disturbance.	High	• Clearance of vegetation must be limited as far as possible to only necessary areas; • Tall dense vegetation that can conceal the Project from sensitive visual receptors, should as far as possible be left in place; and • Dust suppression measures should be implemented to limit the generation of dust.	Medium

Activity	Impact Description	Significance Pre- Mitigation	Mitigation Measures / Recommendations	Significance Post-Mitigation
Vehicular and heavy machinery movement	The movement of vehicles and heavy machinery during the construction phase is likely to create a visual disturbance to surrounding visual receptors. Dust generated along roads is likely.	Medium	• Tall vegetation along the sides of the roads at the site should not be removed, in order to conceal vehicular movement; and • Dust suppression measures should be implemented to limit the generation of dust along roads.	Low
Erection of mine infrastructure	The erection of mine infrastructure (plant, workshop, etc.) is likely to visually intrude on the landscape. However, the footprint area and height of the proposed mine infrastructure is limited.	Medium	• The height of the proposed mine infrastructure should be limited as far as possible; and • Tall dense vegetation that can conceal the Project from sensitive visual receptors, should as far as possible be left in place.	Low

Activity	Impact Description	Significance Pre- Mitigation	Mitigation Measures / Recommendations	Significance Post-Mitigation
Operational Phase				
Open pit mining	Open pit mining will result in depressions that will be approximately 10 m in depth, and will visually intrude on the surrounding landscape. Dust will be generated during mining activities.	High	• If at all possible, the mined out areas should be rehabilitated to a pre-mining topography; • Mined out areas should be vegetated with indigenous species as soon as possible. This will to a degree, mitigate the visual intrusion of these areas on surround visual receptors; and • Dust suppression measures should be implemented to limit the generation of dust.	Medium
Development of dumps	The development of dumps, as mining progresses, will visually intrude on the surrounding landscape.	Medium	• The height of dumps should be limited as far as possible.	Low

Activity	Impact Description	Significance Pre- Mitigation	Mitigation Measures / Recommendations	Significance Post-Mitigation
Vehicular and heavy machinery movement	The movement of vehicles and heavy machinery during the operational phase is likely to create a visual disturbance to surrounding visual receptors. Dust generated along roads is likely.	Medium	• Tall vegetation along the sides of the roads at the site should not be removed, in order to conceal vehicular movement; and • Dust suppression measures should be implemented to limit the generation of dust along roads.	Low

5 TERMS OF REFERENCE FOR THE EIA PHASE

The following will be undertaken during the EIA phase of the project for the VIA study:

- Viewshed modelling will be undertaken to determine the visibility of the Project on the surrounding landscape; and
- The visual impacts will be assessed and mitigation measures proposed.

6 REFERENCES

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 & Development Planning, Cape Town.