



# AQUILA STEEL (S AFRICA) (PTY) LTD:

**Section 24 G: Final Technical Report** 

Locality: The farm Donkerpoort 448KQ Remaining Extent and the farm Randstephne 455KQ Remaining Extent, Thabazimbi; Limpopo

Departmental Ref No: 12/1/9-6/Section 24G/15-W1

**OCTOBER 2014** 



# **PROJECT DETAILS**

Limpopo Department of Economic Development, Environment and Tourism

Reference No.: 12/1/9-6/Section 24G/15-W1

Project Title: Information in support of an application for rectification of unlawful construction of gravel roads on the farm Donkerpoort 448KQ Remaining Extent and the farm Randstephne 455KQ Remaining Extent, Thabazimbi Local Municipality, Waterberg District Municipality, Limpopo

Project Number: AQU-MEL-13-09-05

Compiled by: Khosi Mohlahlo, Wilda Meyer and Brian Hayes

Date: October 2014

Location: The farm Donkerpoort 448KQ, remaining extent, and the farm

Randstephne 455KQ, remaining extent, Thabazimbi Local Municipality,

**Waterberg District Municipality, Limpopo** 

Technical Reviewer: Jacs van Rooy



# **EXECUTIVE SUMMARY**

## The Applicant

Aquila Steel (S Africa) (Pty) Limited ("Aquila Steel") holds the prospecting rights to the Meletse iron ore deposit located near the town of Thabazimbi in the Limpopo Province of South Africa. Aquila Steel obtained separate prospecting rights for the properties Randstephne 455KQ, remaining extent, on 18 July 2007 (as part of what is known as the Klipgat Prospecting Right) and Donkerpoort 448KQ, remaining extent, on 22 October 2008 (known as the Donkerpoort Prospecting Right) in Limpopo, South Africa. The surface rights of the farm Donkerpoort 448KQ, remaining extent, and the farm Randstephne 455KQ, remaining extent, belong to Aquila Steel Thabazimbi (S Africa) Pty Ltd. Since commencing in late 2007, Aquila Steel's prospecting has led to the discovery of the Meletse Iron Ore Deposit ("Meletse Deposit") on the Donkerpoort and Klipgat Prospecting Rights.

## Purpose of this document

Aquila Steel received a letter from the Limpopo Department of Economic Development, Environmental Affairs and Tourism (LEDET), dated 07 August 2013 as contained in Appendix C3, in which the following was stated: "

- 1. The above matter and site visit conducted on 22 May 2012 refer.
- 2. The Department indicated that there is an application for rectification of unlawful commencement and continuation of unlawful activities on the subject property, which was submitted by Enviro Solution Systems (Christo Gagiano) on 05 February;
- 3. The Department found out that the gravel road has been expanded and associated activities also affect the farm Randstephne 455 KQ;
- 4. Aquila Steel South Africa (Pty) Ltd also confirmed during the site visit that Mr. Christo Gagiano does not offer services in respect of environmental impact assessment;
- 5. After having reviewed the content of the above-mentioned application, the Department found that Aquila Steel South Africa (Pty) Ltd has never submitted any further information to enable the Department to make an informed decision in this regard.
- 6. In light of the above, the Department requires that:
  - (a) Aquila Steel South Africa (Pty) Ltd appoints a new Environmental Assessment Practitioner (EAP) to take over the process forward and ensure the finalization of the subject matter;"

The purpose of this Environmental Impact Assessment Report is to supply the LEDET with the requested information as per the above letter: "6 (b) The newly appointed EAP proceeds with the compilation of an Environmental Impact Assessment Report in terms of the Environmental Impact Assessment Regulations (EIA) of 2010. However the report must include but not limited to the following:

 i. An amendment application form that will include activities that commenced on the farm Randstephne 455 KQ": <u>Aquila Steel has submitted the application form on 12 June 2014 and a signed copy is also</u> <u>attached as Appendix C1 to this EIR;</u>



- ii. "Assessment of the nature, extent, duration and significance of the impacts of the activity on the environment, including cumulative effects": <u>A detail risk assessment of the impacts associated with the unlawful activities is discussed in Chapter 4, Section 4.2 and Section 4.3 (cumulative impacts) of this Section 24G EIR;</u>
- iii. "Description of mitigation measures undertaken or to be undertaken in respect of the activity on the environment": <u>Mitigation measures are discussed in Chapter 4</u>, <u>Section 4.2 and further included</u> within the site specific Environmental Management Programme.
- iv. "Public participation process that reflects compliance with Chapter 6 in terms of the EIA Regulations of 2010": <u>Chapter 6 of this EIR provides full description and reference to relevant records on the public participation process followed</u>; and
- v. "A site specific Environmental Management Programme": The Draft Environmental Management Programme is attached as Appendix G.

#### Location

The constructed gravel roads (the unlawful development/activity) are situated on the farms Donkerpoort 448KQ, remaining extent, and Randstephne 455KQ, remaining extent, (hereafter referred to as the "contravened site"), located some 30km east of the town of Thabazimbi. The contravened site lie within the magisterial area of the Thabazimbi Local Municipality (TLM), a part of the Waterberg District Municipality (WDM), Limpopo Province, within 10km of the Marakele National Park.

## **Activity description**

From September 2007 to January 2014, Aquila Steel constructed gravel roads on the farm Donkerpoort 448KQ, remaining extent, and the farm Randstephne 455KQ, remaining extent. The roads were constructed to allow access for prospecting activities that were conducted by the exploration team. Aquila Steel's prospecting activities have led to the discovery of the Meletse Iron Ore Deposit on the farm Donkerpoort 448KQ, remaining extent, and the farm Randstephne 455KQ, remaining extent, with a current measured, indicated and inferred resource of 80.8Mt at 61.1%Fe. This high grade iron ore deposit is very low in contaminants and outcrops at the surface.

Detail on the unlawful development is provided within the main report. A summary thereof is provided below:

PHASE	DURATION			A	CTIVITY DESCRIPTION
Construction	September	2007	_	•	Civil Blasting activities for the establishment of roads. As per
	January 2014.				information provided by Aquila Steel, blasting activities were
					undertaken during the following months: Nov 2007; Nov 2008;
	Construction	activit	<u>ies</u>		Dec 2008; Jun 2010; Sep 2010; Nov 2010; Mar 2011; Apr 2011;
	have ceased.				May 2011; Jun 2011; Sep 2011. A total of 12 blasts (7 of these
					associated with road construction and a further 5 to release drill $% \left( 1\right) =\left( 1\right) \left( 1\right) $
					rods that were stuck).



 Establishment of gravel roads that included vegetation clearance (including trees); removal and stockpiling of topsoil; and grading of roads. All road construction activities were undertaken during daytime hours. Total disturbance associated with unlawful development is given below:

Existing farm roads widened	11.65 km
Construction of roads (partially rehabilitated):	1.95 km
Construction of roads (still in use)	19.29 km
TOTAL	32.89 km

This rectification application is for the total constructed road length of 32.89 km, with a total surface area disturbance of 33 ha. The section of road shown as "partially rehabilitated" above, still needs to meet rehabilitation requirements applicable to all roads (as per the mitigation measures specified within this report).

- Road construction activities also interfered with a number of nonperennial drainage lines.
- Fuel required for road construction (graders) was supplied via a
   1 000l diesel bowser (tank on a trailer). The tank was filled in town (Thabazimbi) and delivered to site for refueling as required.
- Abstraction of water from boreholes for prospecting activities (including for dust suppression purposes) occurred.
- Utilisation and maintenance of gravel roads. This includes all transportation activities on the road. Light utility vehicles (bakkies) travelling on gravel roads: approximately 4 trips per day. All road use and prospecting activities are undertaken during daytime hours. As confirmed by Aquila Steel, no lighting is provided on site as no activities are undertaken after dark.

Operation

September 2007 – up until • Closure

Operational activities have temporarily ceased, pending the outcome from the Section 24G Rectification Application. Aquila Steel has indicated that further prospecting will likely not continue).

Closure

Not yet undertaken.

Rehabilitation of roads: No rehabilitation of roads has been completed (even portion of road reflected as "partially rehabilitated"). This will only occur on completion of prospecting activities. Aquila Steel is also in process of applying for a mining right (and supporting EIA) for the area where prospecting is being undertaken. Should a mining license be granted, roads will be utilised (and upgraded) as part of the mining operations, with rehabilitation covered during and after Life of Mine.



# Legal requirements and legislative process

#### **APPLICATION PHASE**

SCHEDULE	PROCESS	STEPS TAKEN
5 February 2008	Section 24G Application form submitted by Aquila Steel	Submission of Application form and obtaining Project reference number
21 November 2013	Initial notification of application	Background Information Document distributed, newspaper advertisement and site notices placed IAPs & Stakeholder register / database compiled, I&APs and Stakeholder comments recorded, telephonic and electronic notifications
23 January 2014	Amended Section 24G Application form	Submission of Application form and obtaining the Project reference number
11 February 2014	Acknowledgment of receipt of application form from the LEDET	Received acknowledgment of receipt of application from the LEDET
12 June 2014	Amended Section 24G Application form	Submission of amended Application form based on additional activities identified

#### **SECTION 24G PHASE**



SCHEDULE	PROCESS	STEPS TAKEN
11 March 2014	Notifications to IAPs on availability of the Draft Section 24G EIR on Shangoni's website	Letters to inform IAPs and Stakeholders of the availability of the Draft Section 24G EIR
11 – 24 March 2014	Commenting period on the Draft Section 24G EIR	Draft Section 24G EIR for public and Stakeholder comment (available on <a href="www.shangoni.co.za">www.shangoni.co.za</a> ) and consultation with local authorities and the public
11 March – 11 April 2014	Extended commenting period for Draft Section 24G EIR	(where relevant)
12 April – 20 June 2014	Acknowledgement and assessment of comments received	
	Incorporation of comments received from IAPs into the Draft S24 EIR	Incorporation of comments and issues into the Section 24G EIR
20 June 2014	Submission of Draft Section 24G EIR to the LEDET	Draft Section 24G EIR to the LEDET
21 June – 16 August 2014	40 day commenting period for IAPs on the Draft Section 24G EIR	Commenting period of 40 days
18 August – 19 September 2014	Incorporate comments from IAPs into the Final Section 24G EIR	Incorporation of comments and issues into the Final Section 24G EIR
22 September – 22 October 2014	30 day commenting period for IAPs on the Final Section 24G EIR	Commenting period
23 October 2014 – 30 October 2014	Incorporate final comments from IAPs into Final Section 24G EIR for submission	Final Section 24G EIR submission

#### **FINAL PHASE**



SCHEDULE	PROCESS	STEPS TAKEN
30 October 2014 onwards	Final Phase	Notify IAPs and Stakeholders of government authority's decision on the Section 24G Application.



# Summary of environmental impacts identified

The activities associated with the unlawful road constructions as part of the prospecting activities are described in full in Part 2 of this report and the impacts or potential impacts of the unlawful road constructions are described in Part 4. The table below provides a summary of impacts of the unlawful road constructions and associated activities.

Potential Impact		Environmental Significance Pre Mitigation			gnificance tion	
	<b>P</b> <sup>1</sup>	M <sup>2</sup>	S <sup>3</sup>	Р	M	S
Air quality						
Dust fallout impacts relate to nuisance impacts. $PM_{2.5}$ and $PM_{10}$ impacts can in general be of concern due to their direct health impact potentials.	5	1	L	5	1	L
Aquatic and surface water						
The gravel roads cross the natural drainage lines, causing an impact on surface water quality and surface water flow patterns. Siltation and sedimentation into rivers lead to loss of fish habitats and fish biodiversity.	4	2	М	4	1	L
Removal of riparian vegetation during road construction	4	2	М	4	2	М
Alteration to the hydrology/geomorphology of the mountain spring	2	1	L	2	1	L
Cultural Heritage						
Anthropology – Madimatla Cave <sup>4</sup>	5	5	Н	5	4	H <sup>5</sup>
Fear that the cave and the landscape will 'suffocate' in the advance of the harsh mining developments around Madimatla. As per the healers, interventions and disturbances have already transpired around Madimatla, as given below:						
The noise levels of exploration vehicle traffic have concerned them for some time;						
• The impact of the road infrastructure caused by the exploration vehicles was not anticipated by people who have utilised the natural resources around Madimatla for decades;						
• The pre-mining exploration has introduced 'strangers' to the area who forage around Madimatla for 'firewood'; and						

<sup>&</sup>lt;sup>1</sup> Probability

<sup>&</sup>lt;sup>2</sup> Magnitude

<sup>&</sup>lt;sup>3</sup> Severity

<sup>&</sup>lt;sup>4</sup> Cave is also known as Gatkop Cave

<sup>&</sup>lt;sup>5</sup> The anthropologist indicated that the risk rating might be reduced once all the representatives of the healers are accommodated by Aquila Steel by means of site and other meetings, during which their fears are properly addressed and they are kept up to date with continuous developments around Madimatla, and as long as the lines of communication are kept open and maintained on a regular basis.

Potential Impact	Environmental Significance Pre Mitigation			gnificance tion		
	<b>P</b> <sup>1</sup>	M <sup>2</sup>	S <sup>3</sup>	Р	M	S
Aquila Steel proceeded with construction of the perimeter fence and access gate without consultation of the traditional healers.						
Archaeological Heritage		Н			L	
Heritage sites on the contrived sites include Perreira Grave, Gatkop Cave, Randstephne Homestead, Labourer's Cemetery, early nineteenth century Iron Age period sites that include 'mines' (3?), 'smelting sites' (1), 'animal enclosures' (4?) and 'living areas' (2?). Current impacts relate to neglect and prospecting roads passing through or near some of the sites.						
Palaeontology Heritage	2	2	L	2	2	L
Palaeontology of Gatkop Cave site: Several dolomitic breccia units of various ages, degrees of cementation and sedimentary facies are exposed within the cave. The site is situated some four kilometres SSW of the main iron ore prospecting area and over 600 m lower in elevation.						
Economic						
The creation of roads would have created an economic value add at the construction phase. From desk-top research it appears that there is little scientific evidence to support that blasting could have impacted the breeding productivity of game in the area.		Positive			Positive	
Fauna						
Habitat transformation due to road construction.	3	4	Н	3	3	M
Use of roads creating noise disturbance.	3	3	М	2	2	L
Use of roads causing road mortalities.	3	3	М	2	2	L
Outside lighting could attract animals and lead to disorientation and collision with structures.	2	2	L	2	2	L
Bats						
Reduction in population size of species roosting in Gatkop cave due to collisions with vehicles (increased vehicular activity at night).	2	2	L	1	2	L
Removal of natural vegetation during road construction (clearance of 33 ha of natural vegetation), thereby incurring losses to foraging habitat and prey base.	2	2	L	2	2	L
Blasting may induce rock falls within the cave that compromises the roosting space and/or kills roosting bats. Or blasting may be a disturbance to the bats roosting in the cave, to the degree that it may reduce their survival or cause them to abandon the roost.	4	1	L	1	1	L
Cape Vulture						
		Loui			Low	
Loss of foraging due to land clearance.		Low			Low	
Air blast overpressure caused by civil blasting activities.		Low			Low	



Potential Impact		nmental Si Pre Mitiga	gnificance tion	Environmental Significance Post Mitigation			
	<b>P</b> <sup>1</sup>	M <sup>2</sup>	S <sup>3</sup>	Р	M	S	
Flora							
Loss of range-restricted habitat and increased fragmentation of sensitive communities and threatened plant species (pertaining to open <i>Protea caffra – Loudetia flavida</i> savannoid grassland on mountain plateaus).	5	5	Н	5	5	Н	
Loss of floristic diversity and invasion by alien/invader taxa.	3	3	М	2	2	L	
Geohydrology							
The stripping and stockpiling of topsoil and subsoil from the infrastructure surface areas.	2	2	L	2	2	L	
Blasting by means of nitrate based explosives may have significant impacts on groundwater quality.	3	1	L	3	1	L	
Geology							
Removal of the surficial/bedrock deposits through removal/excavation/civil blasting that may lead to an impact on the transmissivity and hydraulic conductivity of rock; stability of rock; erosion; and loss of geological resource.	2	2	L	2	2	L	
Land use and capability							
The land use and capability where the gravel roads have been established has been altered from game farming to now being used as access roads to the prospecting site.	5	2	М	5	2	М	
Noise							
Noise disturbance caused by civil blasting.	4	2	М	1	1	L	
Noise disturbance caused by road grading and use of roads.	4	1	L	4	1	L	
Permits/Licenses triggered							
Abstraction of water – No water use license required, but water use registration is required.	Comply						
Construction of gravel roads through drainage lines.		Non-compliance Comply					
Social							
The visual impacts were not mitigated sufficiently and it has changed the sense of place.	5	5	Н	5	4	H <sup>6</sup>	

<sup>&</sup>lt;sup>6</sup> This impact can be reversed at a high cost with a lot of effort that will result in further reduction of risk rating. Also refer to previous discussions under Cultural Heritage (Anthropologist).



otential Impact Environmental Pre Mitiç		mental Si Pre Mitigat		Environmental Signifi Post Mitigation		
	<b>P</b> <sup>1</sup>	M <sup>2</sup>	S <sup>3</sup>	Р	M	S
There was a breakdown in the trust relationship between Aquila Steel and the communities.						
This event was the catalyst for Aquila Steel to lose its social license to operate.						
Soil						
Soil erosion.	2	2	L	2	2	L
Loss of original soil cover.	2	2	L	2	1	L
Spillages during fuel handling (loading and offloading) activities are of small quantity (bulk storage of 1 000 liters).	3	2	М	1	1	L
Traffic						
The roads on-site are not a trip generator, but the activity for which the roads were constructed can generate external trips.	5	1	L	5	1	L
Vibration						
Civil blasting effects expected during road construction would have been ground vibration.	4	1	L	4	1	L
Visual						
Several receptors are located in the <i>foreground</i> and <i>middle ground</i> of the project site. The sensitive receptors in the <i>foreground</i> and <i>middle ground</i> of the generated viewshed represent mostly users of the road networks and several tourist facilities such as game farms and lodges. Due to the height of the project site, most of the receptors will have a clear line of sight of the prospecting roads	5	4	Н	5	4	H <sup>7</sup>
The specific soil type is not particularly prone to wind and water erosion, however, given the extreme slope of the site and the lack of compacted spoil areas resulted from the roads construction, several areas along the prospecting roads have already started to erode. In addition to the above, the prospecting roads have been cut into the mountainside to provide, in particular, sufficient passing facilities. This has created large sections of unsightly exposed rock faces.	5	4	Н	3	3	М
Dust caused by vehicles making use of the prospecting roads is expected to have a visual impact, especially where dust clouds extend above tree canopies and landscaping features	5	2	М	5	1	L

<sup>&</sup>lt;sup>7</sup> The signficance rating reflects if rehabilitation of the prospecting roads are not undertaken. It is foreseen that the original landscape form could be regained if the prospecting roads are rehabilitated. The visual impact will therefore be improved from a negative to a positive impact.



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- Appendix F4 African Heritage Consultants CC. May 2014. 1st Phase Cultural Heritage Impact Assessment for the farms Donkerpoort 448 KQ, Randstephne 455 KQ and Waterval 443 KQ, Thabazimbi, Limpopo province.
- Appendix F5 Seamark, E.C.J. & Kearney, T.C. June 2014. Meletse Iron Ore Project:

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- Appendix F6 Shangoni Management Services. May 2014. Storm Water Management Plan for Aquila (Steel S Africa) (Pty) Ltd: Meletse Iron Ore Project.
- Appendix F7 Kornelius, G & Bornman R. January 2014. Meletse Iron Ore Project: Air Quality Specialist assessment report.
- Appendix F8 Varicon CC. February 2014. Updated environmental Noise Survey Report.
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# **DEFINITIONS**

#### **Environment**

The surroundings (biophysical, social and economic) within which humans exist and that are made up of the land, water and atmosphere of the earth; micro-organisms, plant and animal life; any part or combination of (i) and (ii) and the interrelationships among and between them; and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

#### **Environmental Aspects**

Elements of an organisation's activities, products or services that can interact with the environment.

#### **Environmental Degradation**

Refers to pollution, disturbance, resource depletion, loss of biodiversity, and other kinds of environmental damage; usually refers to damage occurring accidentally or intentionally as a result of human activities.

#### **Environmental Impacts**

Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.

#### **Environmental Impact Assessment**

A study of the environmental consequences of a proposed course of action.

#### **Environmental Impact Report**

A report assessing the potential significant impacts as identified during the environmental impact assessment.

#### **Environmental impact**

An environmental change caused by some human act.

#### Land use

The various ways in which land may be employed or occupied. Planners compile, classify, study and analyse land use data for many purposes, including the identification of trends, the forecasting of space and infrastructure requirements, the provision of adequate land area for necessary types of land use, and the development or revision of comprehensive plans and land use regulations.

#### **Pollution Prevention**

Any activity that reduces or eliminates pollutants prior to recycling, treatment, control or disposal.



#### **Public Participation Process**

A process of involving the public in order to identify needs, address concerns, in order to contribute to more informed decision making relating to a project, programme or development.

#### **Registered Interested and Affected Party**

In relation to an application, means an interested and affected party whose name is recorded in the register opened for that application.

#### **Topography**

Topography, a term in geography, refers to the "lay of the land" or the physio-geographic characteristics of land in terms of elevation, slope and orientation.

#### Vegetation

All of the plants growing in and characterising a specific area or region; the combination of different plant communities found there.

#### Waste

As per the definition of the National Environmental Management Waste Act, Act 59 of 2008 - means any substance, whether or not that substance can be reduced, re-used, recycled and recovered—

(a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of; (b) which the generator has no further use of for the purposes of production; (c) that must be treated or disposed of; or (d) that is identified as a waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but— (i) a by-product is not considered waste; and (ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste.



# **ABBREVIATIONS**

BID – Background Information Document
 DMR – Department of Mineral Resources

**DWA** – Department of Water Affairs

EAP – Environmental Assessment Practitioner
 ECA – Environmental Conservation Act of 1989

EIA – Environmental Impact Assessment

EIR – Environmental Impact Report

EMF – Environmental Management FrameworkEMP – Environmental Management Programme

**GDP** – Gross Domestic Product

**GN** – Government Notice

IAP – Interested and Affected Party

LEDET - Limpopo Department of Economic Development, Environmental Affairs and

Tourism

NEMA – National Environmental Management Act, Act 107 of 1998 as amended

R – Regulation

RDP – Rural Development Programme

SIA – Social Impact Assessment

S&EIR - Scoping and Environmental Impact Reporting

Section 24G – Section 24 G

TLM – Thabazimbi Local MunicipalityWDM – Waterberg District Municipality



# 1. INTRODUCTION

This document forms part of an application for rectification (Section 24G) for the unlawful construction of gravel roads on the farm Donkerpoort 448KQ, remaining extent, and the farm Randstephne 455KQ, remaining extent, Limpopo. The application process is undertaken on behalf of the applicant, Aquila Steel (S Africa) (Pty) Ltd. Shangoni was appointed, as independent environmental practitioner, to prepare this Section 24G Application and facilitate the application process.

This report is divided into the following parts:

Part 1: Introduction

Part 2: Nature and extent of the activity

Part 3: Nature and extent of the environment affected by activity

Part 4: Environmental framework

Part 5: Applicable legislation and guidelines

Part 6: Public Participation Process

Part 7: Conclusion

# 1.1 Details of the project applicant

Applicant	Aquila Steel (S Africa) (Proprietary) Limited
Postal Address	PostNet Suite 317 Private Bag X 75 Bryanston 2021
Responsible Person	Mr. Michael Halliday
Telephone Number	011 463 1340
Facsimile Number	011 514 0441
Cell Phone Number	27 82 655 3401
E-Mail Address	MHalliday@aquilaresources.com.au
Company Registration No.	2005/021254/07
Co-ordinates of unlawful operation	24°35'35.95" S 27°39'36.16" E



## 1.2 Appointed Environmental Assessment Practitioner

Name of firm	Shangoni Management Services		
Postal address	PO Box 74726 Lynnwood Ridge 0040		
Telephone No.	012 807 7036		
Fax	012 807 1014		
E-mail	leeanne@shangoni.co.za		
Team of Environmental Assessment Practitioners on project			
Name	Qualifications	Responsibility	
Khosi Mohlahlo	BSc (Hons) Environmental Management	Report compilation	
Wilda Meyer	BSc (Hons) Geography and Environmental Management	Report compilation	
Brian Hayes	B Eng (Chemical), MSc Environmental Engineering	Report compilation	
Dawie Maree	M.Sc. Masters degree in Environmental Sciences and Geography	GIS Specialist	
Lee-Anne Fellows	B-Tech Nature Conservation	Project manager	
Jacs van Rooy	BSc (Biochemistry & Microbiology)	Technical reviewer	

<sup>\*</sup> Detailed CV's for the project team are attached (Appendix D).

# **Project Team Profiles**

#### Jacs van Rooy - Technical Reviewer

Jacs has over twenty years' experience in the implementation and assessment of health, safety, environmental and quality management systems. He worked for 10 years in the system certification field with the SABS as a quality ISO 9001 auditor in the food, pharmaceutical and chemical industries, and established the ISO 14001 and OHSAS 18001 certification schemes at the SABS, obtained accreditation from SANAS and the RvA for these two certification schemes. As part of the technical committees for establishing the OHSAS 18001 standard and ISO TC207 responsible for establishing and reviewing the ISO 14001 series of standards, Jacs has obtained an in depth understanding of the intent and requirements of ISO 14001 and OHSAS 18001. Jacs has since been involved in auditing HSE Management systems across all sections of industry in several parts of Sub-Saharan Africa. Since 2000 Jacs was cofounder of Shangoni Management Services responsible for HSE-MS consulting and development in the petrochemical, power generation and mining sectors. He is also actively involved in legal compliance audits, training and subcontracted on third party certification audits.

#### Lee-Anne Fellows – Project manager

Lee-Anne has a B-tech degree in Nature Conservation at the Tshwane University of Technology and holds a National Diploma in Nature Conservation. She gained valuable experience in the conservation and the environmental field through her employment at Gauteng's Department of Agriculture, Conservation and Environment. Her areas of expertise include flora monitoring, bio-diversity and conservation plans, Environmental Impact Assessments (EIA), identification of alien invasive species and eradication programmes. Leeanne has 7 years' experience at Shangoni Management Services as project lead to EIA's and EMP.

#### **Brian Hayes – Environmental Practitioner**

Brian is a registered professional engineer (Chemical) with a master degree in Environmental Engineering from the University of Nottingham. Brian has 20 years' experience in environmental management and environmental engineering.

#### Khosi Mohlahlo - Environmental Practitioner

Khosi obtained her B.Sc. Hons in Environmental Management from UNISA in 2013. She is currently involved in EIA and EMP development for new mining and prospecting rights, as well as supporting EMP performance assessments.

#### Wilda Meyer - Environmental Practitioner

Wilda obtained a B.Sc. Hons degree in Geography and Environmental Management through the University of Johannesburg. She has valuable experience in ISO14001 Environmental Management Systems, Environmental Management Programme Reports (EMP), Basic Assessment Reports, Scoping Reports and Environmental Impact Assessments (EIA). Wilda also has experience in the compilation of Integrated Water and Waste Management Plans (IWWMP) and Integrated Water Use License Applications (IWULA).

#### **Dawie Maree – Environmental Practitioner**

Dawie completed a M.Sc. Masters degree in Environmental Sciences and Geography from the North West University (Potchefstroom). He gained valuable experience in Geographic Information Systems (GIS) and various environmental projects working as a GIS assistant at the University and as a Technician during previous employment. Dawie is responsible for Hydrological studies and GIS support at Shangoni.

# 1.3 Unlawful activity and motivation

Gravel roads were constructed on the farm Donkerpoort 448KQ, remaining extent, and the farm Randstephne 455KQ, remaining extent, from September 2007 to January 2014. The site locality map



is provided in Figure 1 and is attached in Appendix B1. The gravel roads were required for access to prospecting activities that were conducted by Aquila Steel's Thabazimbi prospecting team. The unlawful road construction is illustrated in Figure 2 and the distance from the site to the Marakele National Park (less than 10 km) is indicated in Figure 3.

A total constructed road length of 32.89 km is being applied for in this rectification process. This includes the existing farm roads that were widened and gravel roads that were constructed (in use and partially rehabilitated). The total area disturbance for the gravel road construction and areas cleared for prospecting equate to a surface area of 33 ha. The section of road that has been indicated as rehabilitated still needs to meet rehabilitation requirements as applicable to all roads (as per mitigation measures specified within this Section 24G EIR report). Other activities associated with the unlawful road construction are discussed below:

# PHASE DURATION Construction September 2007 – January 2014.

Construction

have ceased.

activities

#### **ACTIVITY DESCRIPTION**

- Civil Blasting activities for the establishment of roads. As per information provided by Aquila Steel, blasting activities were undertaken during the following months: Nov 2007; Nov 2008; Dec 2008; Jun 2010; Sep 2010; Nov 2010; Mar 2011; Apr 2011; May 2011; Jun 2011; Sep 2011. A total of 12 blasts (7 of these associated with road construction and a further 5 to release drill rods that were stuck).
- Establishment of gravel roads that included vegetation clearance (including trees); removal and stockpiling of topsoil; and grading of roads. All road construction activities were undertaken during daytime hours. Total disturbance associated with unlawful development is given below:

Existing farm roads widened	11.65 km
Construction of roads (partially rehabilitated):	1.95 km
Construction of roads (still in use)	19.29 km
TOTAL	32.89 km

This rectification application is for the total constructed road length of 32.89 km, with a total surface area disturbance of 33 ha. The section of road shown as "partially rehabilitated" above, still needs to meet rehabilitation requirements applicable to all roads (as per the mitigation measures specified within this report).

- Road construction activities also interfered with a number of nonperennial drainage lines.
- Fuel required for road construction (graders) was supplied via a
   1 000l diesel bowser (tank on a trailer). The tank was filled in town (Thabazimbi) and delivered to site for refueling as required.



Operation

Closure

Operational activities have temporarily ceased, pending the outcome from Section 24G Rectification Application. Aquila Steel has indicated that further prospecting will likely not continue).

 Abstraction of water from boreholes for prospecting activities (including for dust suppression purposes) occurred.

September 2007 - up until • Utilisation and maintenance of gravel roads. This includes all transportation activities on the road. Light utility vehicles (bakkies) travelling on gravel roads: approximately 4 trips per day. All road use and prospecting activities are undertaken during daytime hours. As confirmed by Aguila Steel, no lighting is provided on site as no activities are undertaken after dark.

Closure

Not yet undertaken.

Rehabilitation of roads: No rehabilitation of roads has been completed (even portion of road reflected as "partially rehabilitated"). This will only occur on completion of prospecting activities. Aquila Steel is also in process of applying for a mining right (and supporting EIA) for the area where prospecting is being undertaken. Should a mining license be granted, roads will be utilised (and upgraded) as part of the mining operations, with rehabilitation covered during and after Life of Mine.

The gravel roads were constructed without obtaining the necessary environmental authorisation in terms of Sections 24(2), 24(5), 24D and 44 of the National Environmental Management Act, 1998, (Act No. 107 of 1998). Aquila Steel indicated that on commencement of these unlawful activities, the company was not aware that it should have complied with other environmental legislative requirements as the applicant had already obtained authorisation from the Department of Mineral Resources. Aquila Steel further obtained authorisation from the landowner at the time to construct the gravel roads. Subsequently, Aquila Steel purchased the property. In addition, a rehabilitation fund had been secured with the Department of Mineral Resources to rehabilitate the gravel roads.

A section 24G Rectification Application was previously made by Aquila Steel on 05 February 2008 to the LEDET once Aguila Steel realised that environmental authorisation should have been obtained prior to commencement. As per correspondence received from the LEDET, dated 07 August 2013, it was indicated that the Department was aware that an application for rectification of unlawful commencement and continuation of unlawful activities was submitted, and furthermore that the gravel roads have been expanded and associated activities also affect the farm Randstephne 455 KQ, remaining extent. The Department further indicated that Aquila Steel never submitted any further information to enable the Department to make an informed decision in this regard. The Department requested that a new Environmental Management Practitioner (EAP) be appointed by Aquila Steel to take over the process and ensure finalisation of the matter.



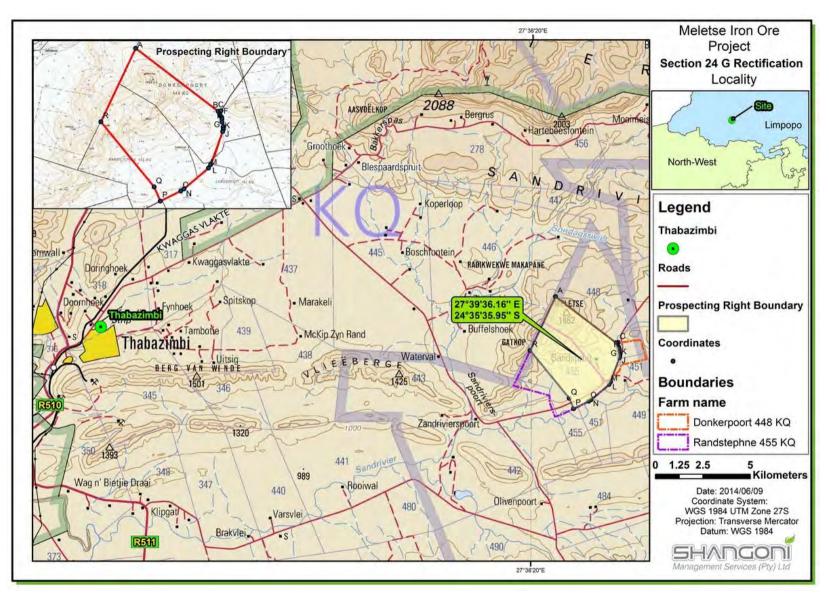


Figure 1: Map illustrating the locality of the contravened site.



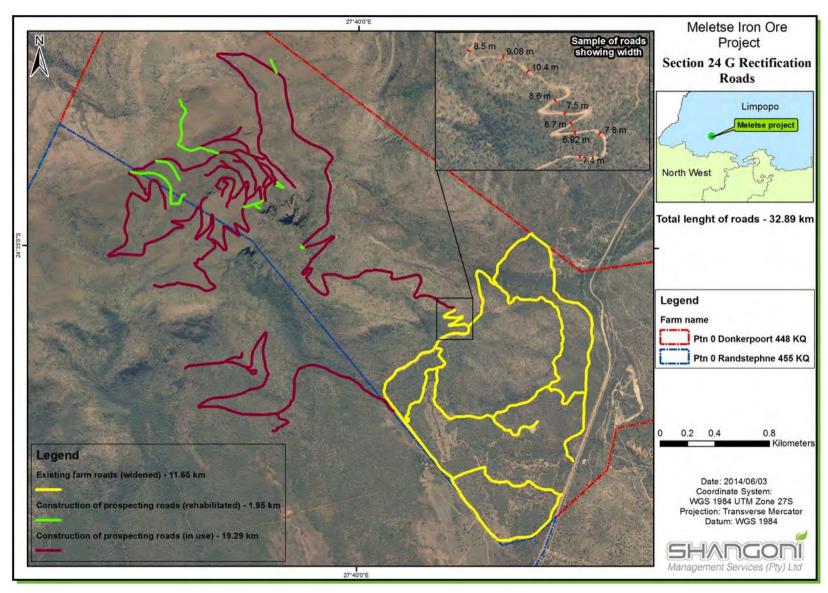


Figure 2: Map illustrating the gravel roads on the contravened site.



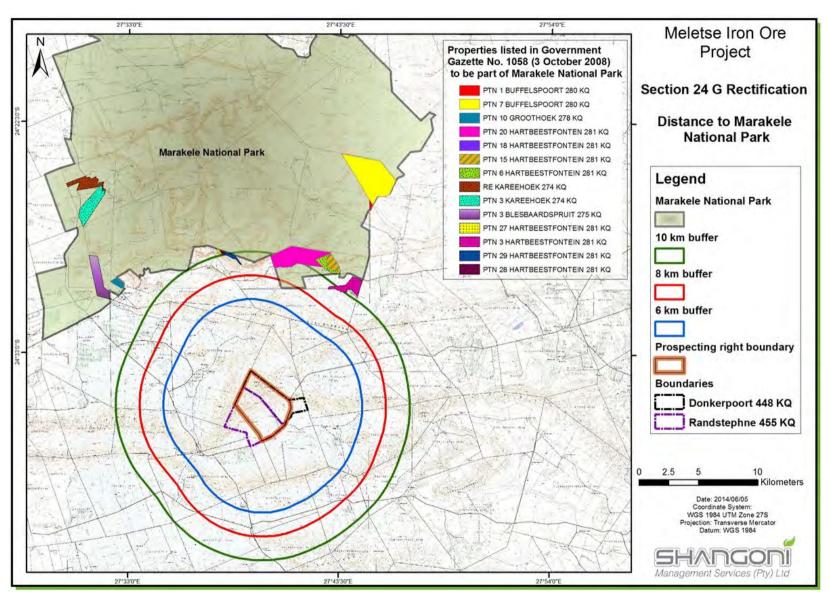


Figure 3: Map illustrating the distance from the contravened site to Marakele National Park



In accordance with Section 24(G) read together with sections 24(F) and 12(3) of the National Environmental Management Amendment Act, 2008 (Act No. 62 of 1998), the applicant is required to carry out a rectification process for unlawfully commencing with the activities listed in Table 1 below.

Table 1: Unlawful activities undertaken for which the Rectification Application is undertaken

Activity as per	Description of activity undertaken
Regulation	
11	Listed Activity(ies):
16	Listing Notice 3: Activity 16 is described in association with Listing
	Notice 1: Activity 11 as both relate to the construction of structures /
	infrastructure within a watercourse or within 32m of a watercourse.
	Listing Notice 3: Activity 16, however, additionally relates to the
	proximity of such activities to a geographically sensitive receptor (in
	this case the Marakele National Park). Refer to descriptions below.
	Listing Notice 1: Activity 11:
	The construction of:
	(i) canals;
	(ii) channels;
	(iii) bridges;
	(iv) dams;
	(v) weirs;
	(vi) bulk storm water outlet structures;
	(vii) marinas;
	(viii) jetties exceeding 50 square metres in size;
	(ix) slipways exceeding 50 square metres in size;
	(x) buildings exceeding 50 square metres in size; or
	(xi) <b>infrastructure</b> or <b>structures</b> covering 50 square metres or more,
	where such construction occurs within a watercourse or within 32
	metres of a watercourse, measured from the edge of a watercourse,
	excluding where such construction will occur behind the development setback line.
	Listing Notice 3: Activity 16:
	The construction of:
	(i) jetties exceeding 10 square metres in size;
	(ii) slipways exceeding 10 square metres in size;
	(iii) buildings with a footprint exceeding 10 square metres in size; or
	(iv) infrastructure covering 10 square metres or more
	where such construction occurs within a watercourse or within 32
	metres of a watercourse, measured from the edge of a watercourse,
	excluding where such construction will occur behind the development
	setback line.
	In Limpopo, outside urban areas, in:
	Regulation

Number and date of the	Activity as per	Description of activity undertaken
relevant notice	Regulation	
		(hh) Areas within 10 kilometres from national parks or world heritage
		sites or 5 kilometres from any other protected area identified in terms
		of NEMPAA or from the core area of a biosphere reserve.
		Activity undertaken:
		The construction of infrastructure (roads). The prospecting roads
		constructed interfered with a number of non-perennial drainage lines.
		The activity was undertaken within 10km from the Marakele National Park.
R. 544, 18 June 2010	18	Listed Activity:
		The infilling or depositing of any material of more than 5 cubic metres
		into, or the dredging, excavation, removal or moving of soil, sand,
		shells, shell grit, pebbles or rock of more than 5 cubic metres from:  (i) a watercourse;
		(ii) the sea;
		(iii) the seashore;
		(iv) the littoral active zone, an estuary or a distance of 100 metres
		inland of the high-water mark of the sea or an estuary, whichever distance is the greater-
		but excluding where such infilling, depositing, dredging, excavation,
		removal or moving;
		(a) is for maintenance purposes undertaken in accordance with a
		management plan agreed to by the relevant environmental authority;
		Or
		(b) occurs behind the development setback line.
		Activity undertaken:
		The prospecting roads constructed interfered with a number of non-
		perennial drainage lines. The infilling or depositing of material of more
		than 5 cubic metres into, or the excavation, removal or moving of soil
		of more than 5 cubic metres may have taken place.
R. 544, 18 June 2010	22	Listed Activity:
		The construction of a road, outside urban areas,
		(i) with a reserve wider than 13,5 meters or,
		(ii) where no reserve exists where the road is wider than 8
		metres, or
		(iii) for which an environmental authorisation was obtained for the
		route determination in terms of activity 5 in Government Notice 387
		of 2006 or activity 18 in Notice 545 of 2010.
		Activity undertaken:



Number and date of the	Activity as per	Description of activity undertaken	
relevant notice	Regulation		
		The construction of prospecting roads where no reserve exists and	
		the road is wider than 8 meters.	
R. 544, 18 June 2010	40	Listed Activity:	
		The expansion of	
		(i) jetties by more than 50 square metres;	
		(ii) slipways by more than 50 square metres; or	
		(iii) buildings by more than 50 square metres	
		(iv) infrastructure by more than 50 square metres	
		within a watercourse or within 32 metres of a watercourse, measured	
		from the edge of a watercourse, but excluding where such expansion	
		will occur behind the development setback line.	
		Activity undertaken:	
		The expansion of infrastructure (existing roads) covering 50 square	
		metres or more. Roads constructed and expanded upon interfered	
		with a number of non-perennial drainage lines.	
R. 544, 18 June 2010	47	Listed Activity(ies):	
		Listing Notice 3: Activity 19 is described in association with Listing	
R.546, 18 June 2010	19	Notice 1: Activity 47 as both relate to the widening and lengthening of	
		a road. Listing Notice 3: Activity 19 however additionally relates to	
		the proximity of such activities to a geographically sensitive receptor	
		(in this case the Marakele National Park). Refer to descriptions below.	
		Listing Notice 1: Activity 47:	
		The widening of a road by more than 6 metres, or the lengthening of	
		a road by more than 1 kilometre -	
		(i) where the existing reserve is wider than 13,5 meters; or	
		(ii) where no reserve exists, where the existing road is wider than	
		8 metres –	
		excluding widening or lengthening occurring inside urban areas.	
		Listing Notice 3: Activity 19:	
		The widening of a road by more than <b>4 metres</b> , or the lengthening of	
		a road by more than 1 kilometre.	
		In Limpopo, outside urban areas, in:	
		(gg) Areas within 10 kilometres from <b>national parks</b> or world heritage	
		sites or 5 kilometres from any other protected area identified in terms	
		of NEMPAA or from the core area of a biosphere reserve.	
		Activity undertaken:	



Number and date of the	Activity as per	Description of activity undertaken
relevant notice	Regulation	
		The widening and lengthening of existing roads for prospecting
		activities, outside urban areas, within 10km from the Marakele
		National Park.
R.546, 18 June 2010	4	Listed Activity:
		The construction of a road wider than 4 metres with a reserve less
		than 13,5 metres.
		(gg) Areas within 10 kilometres from <b>national parks</b> or world heritage
		sites or 5 kilometres from any other protected area identified in terms
		of NEMPAA or from the core areas of a biosphere reserve.
		Activity undertaken:
		The construction of prospecting roads wider than 4 metres with a
		reserve less than 13,5 metres, located within 10km from the Marakele
		National Park.
R.546, 18 June 2010	14	Listed Activity:
		The clearance of an area of <b>5 hectares or more</b> of vegetation where
		75% or more of the vegetative cover constitutes indigenous
		vegetation, except where such removal of vegetation is required for:
		(1) purposes of agriculture or afforestation inside areas identified in
		spatial instruments adopted by the competent authority for agriculture
		or afforestation purposes;
		(2) the undertaking of a process or activity included in the list of waste
		management activities published in terms of section 19 of the
		National Environmental Management: Waste Act, 2008 (Act No. 59
		of 2008) in which case the activity is regarded to be excluded from
		this list;
		(3) the undertaking of a linear activity falling below the thresholds in
		Notice 544 of 2010.
		In Limpopo, (i) All areas outside urban areas.
		Activity undertaken:
		A total area of 33ha of vegetation has been cleared for the road
		construction / widening / lengthening for prospecting activities (falling
		outside an urban area).

# 1.3.1 Site locality

The unlawful construction of gravel roads was undertaken towards the Meletse beacon at the top of the Meletse Mountain on the farms Donkerpoort 448KQ, remaining extent, and Randstephne 455KQ, remaining extent, located within the Thabazimbi local municipal area of the Waterberg district, in the Limpopo province (Refer Figure 1). Refer to Table 2 below for the property sizes and title deeds. Table 3 below gives information on water management boundaries while Table 4 gives a list of towns closest to the contravened site.



Table 2: Landholdings of contravened site

Farm No.	Extent	Title Deed	Owner
The Farm Donkerpoort No. 448 KQ	837.6995ha	T28163/1986	Aquila Steel Thabazimbi (S
remaining extent.			Africa) (Proprietary) Limited
The Farm Randstephne No. 455 KQ	1301.3585ha	T14383/2011	Aquila Steel Thabazimbi (S
remaining extent.			Africa) (Proprietary) Limited
TOTAL	2139.058ha		

Table 3: Administrative and water management boundaries

Province	Limpopo
District Municipality	Waterberg District Municipality
Local Municipality	Thabazimbi Local Municipality
Department of Mineral Resources (DMR) Local Office	Limpopo Region
Department of Water Affairs (DWA) Local Office	Limpopo Region
Department of Economic Development, Environmental Affairs and Tourism	Limpopo Region
Catchment Zone	Limpopo River Catchment area
Water Management Area	A24H quaternary catchment area.

Table 4: Direction & distance to the nearest town(s)

Distance	Distance from site	Closest town
±27km	West	Thabazimbi
±76km	South east	Modimolle
±70km	South east	Bela-Bela

# 1.3.2 Land tenure and use of immediately adjacent land

Immediate adjacent land is utilised for agricultural activities. Agricultural activities in the area can be divided into three broad categories, namely irrigation farming, dry land crop production and cattle and game farming (including rare game breeding).

The surface owners of the farm portions immediately adjacent to the contravened site are listed in Table 5 below and the neighbouring farms are illustrated in Figure 4. Refer also to Part 6 for more detail regarding the Public Participation Process.

Table 5: Surface rights holders of properties adjacent to the contravened site

Portion	Farm name	Owner
2	Buffelshoek 446	Catwalk Inv 380 (Pty) Ltd
3	Buffelshoek 446	Alwyn Hefer Trust



Portion	Farm name	Owner
4	Buffelshoek 446	Alwyn Hefer Trust
15	Buffelshoek 446	Calshelf Inv 172 (Pty) Ltd
16	Buffelshoek 446	Calshelf Inv 172 (Pty) Ltd
17	Buffelshoek 446	Calshelf Inv 172 (Pty) Ltd
18	Buffelshoek 446	Calshelf Inv 173 (Pty) Ltd
19	Buffelshoek 446	Calshelf Inv 173 (Pty) Ltd
20	Buffelshoek 446	Calshelf Inv 173 Pty Ltd
21	Buffelshoek 446	Calshelf Inv 173 (Pty) Ltd
22	Buffelshoek 446	Calshelf Inv 173 (Pty) Ltd
23	Buffelshoek 446	Calshelf Inv 173 (Pty) Ltd
28	Buffelshoek 446	W.T.A Wilkinson Trust
0	Rebelsig 611	E B Shelf Inv No 166 Pty Ltd
5	Zandrivierspoort 442	Brown Cap Inv (Pty) Ltd
6	Zandrivierspoort 442	Aries Familie Trust
5	Rookpoort 450	SARPHC Prop. (Pty) Ltd
6	Rookpoort 450	SARPHC Prop. (Pty) Ltd
3	Donkerpoort 448	Andre van Coller
10	Donkerpoort 448	Jan Hendrik Coetzer
11	Donkerpoort 448	H.T. Zippy Thirty cc.
2	Meletse 697	Jonker Family Trust
11	Meletse 697	Jonker Familiy Trust
1	Meletse 699	Louis van der Walt
0	Buffelskloof 452	Staat Verdrag
7	Waterval 443	Instutor Eiendoms Trust



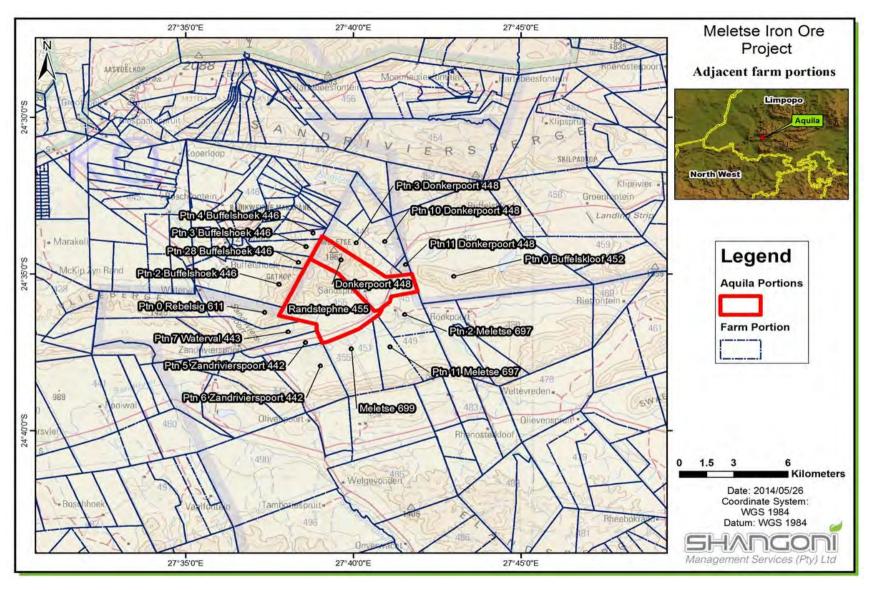


Figure 4: Map indicating the farm portions directly adjacent to the contravened site



# 2. NATURE AND EXTENT OF THE ACTIVITY

# 2.1 Main activity description

## 2.1.1 Construction of roads

Gravel roads were constructed on the farm Donkerpoort 448KQ, remaining extent, and the farm Randstephne 455KQ, remaining extent, from September 2007 to January 2014. These roads are utilised primarily for access to prospecting activities conducted by Aquila Steel's prospecting team. Refer to Figure 5 and Figure 6 for photographs illustrating the gravel roads on the contravened site.

An excavator and grader were used for road construction activities. All construction activities were undertaken during the daytime. A total of 21.24 km of gravel roads were constructed, of which 1.95 km of roads were subsequently rehabilitated<sup>8</sup> (Refer Figure 9). A further 11.65 km old farm road existed on the farm Donkerpoort 448KQ (Refer Figure 7). Aquila Steel upgraded this road by constructing proper drainage channels and safety barriers as per the requirements in the Mine Health and Safety Act, 1996 (Act No. 29 of 1996), on a 1:8 slope with the uphill turns on a 1:9 slope in order to ensure safe handling of equipment on the roads.



Figure 5: Photograph illustrating the gravel roads on the contravened site

<sup>&</sup>lt;sup>8</sup> Although referred to as rehabilitated, for purpose of this application these roads are still viewed "not rehabilitated" and requires the same rehabilitation measures as applicable to all disturbed areas.





Figure 6: Aerial photograph illustrating the gravel roads on the contravened site

#### 2.1.2 Use of roads

Roads are used to access drill sites and to transport drill equipment and core samples obtained during prospecting. Vehicle movement is restricted to daytime hours, with no prospecting activities being undertaken after dark (due to the risks of travelling on roads). As indicated by Aquila Steel, light utility vehicles are the primary gravel road users (4 trips per day) during the prospecting phase. Dust suppression of roads is kept to a minimum and only performed at active prospecting areas.

# 2.2 Water use activities

Water is required for the drill rig operations, potable water and other purposes (e.g. dust suppression). The system is designed for 2 x RC rig and 1 x diamond rig (each using approximately 1000 per day). Approximately 1000 of water is utilised by employees as drinking water per day. Based on 3000 per day for drilling rigs and 1000 per day potable use, the total water demand is 3.1 m³/day. The required daily volume of water is abstracted from a borehole located on the farm Donkerpoort 448 KQ. As the abstraction quantities were not previously monitored, and for purpose of this Section 24G EIR, it is assumed that the quantity of abstraction exceeds 10m³/day (to account for ineffective water use and other applications such as dust suppression). Further information on the quantities of abstraction was obtained from the water use registration as compiled (13 May 2011) and submitted to the DWA. The water use registration indicates a maximum total volume for abstraction of 6130 m³/year (maximum pumping hours of 56 per week). Assuming 8 hours per day, this equates to 15 m³/day.

The gravel roads cross various natural drainage lines within the valley (on both farms Donkerpoort 448 KQ remaining extent and Randstephne 455 KQ), remaining extent, as depicted in Figure 10.



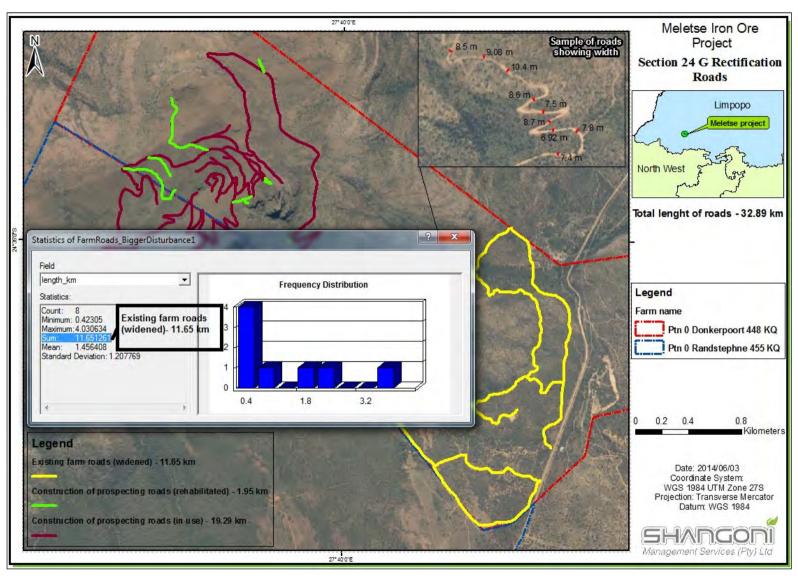


Figure 7: Map indicating length of existing roads (widened)



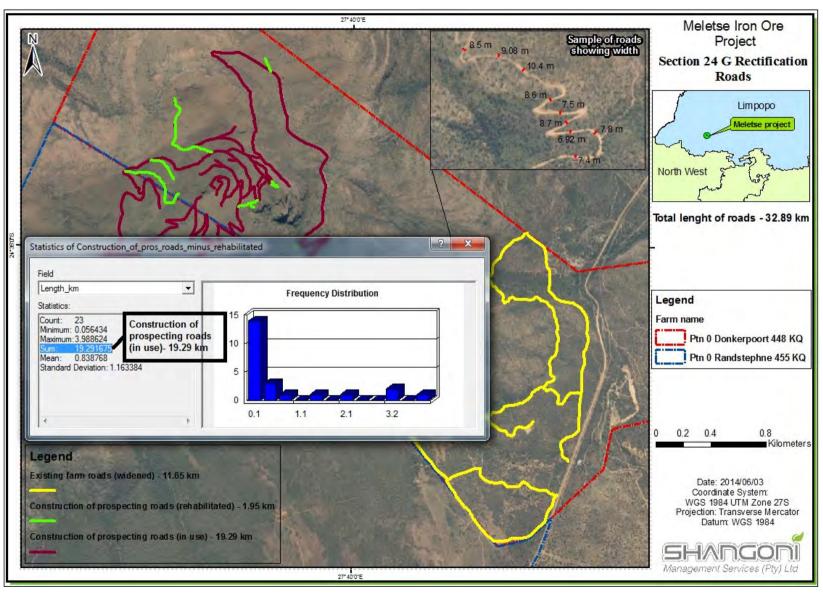


Figure 8: Map indicating length of prospecting roads constructed (in use)



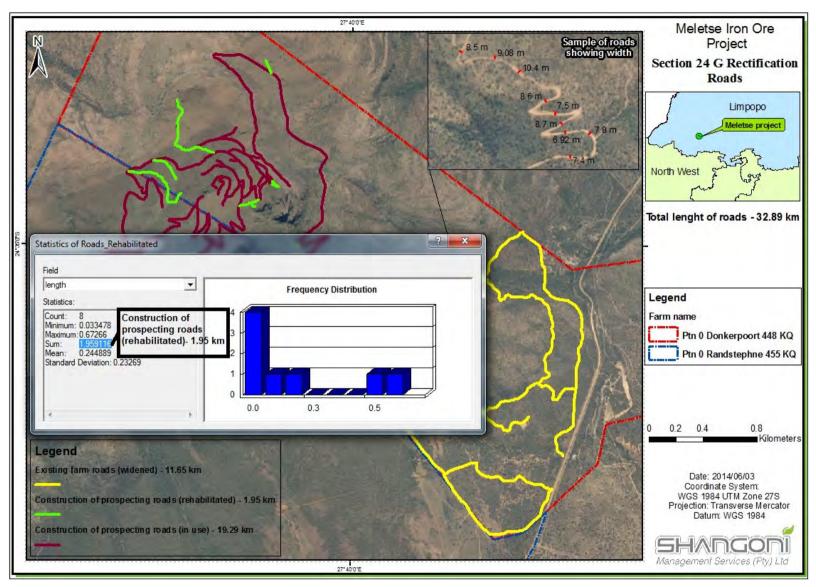


Figure 9: Map indicating length of prospecting roads constructed (rehabilitated)



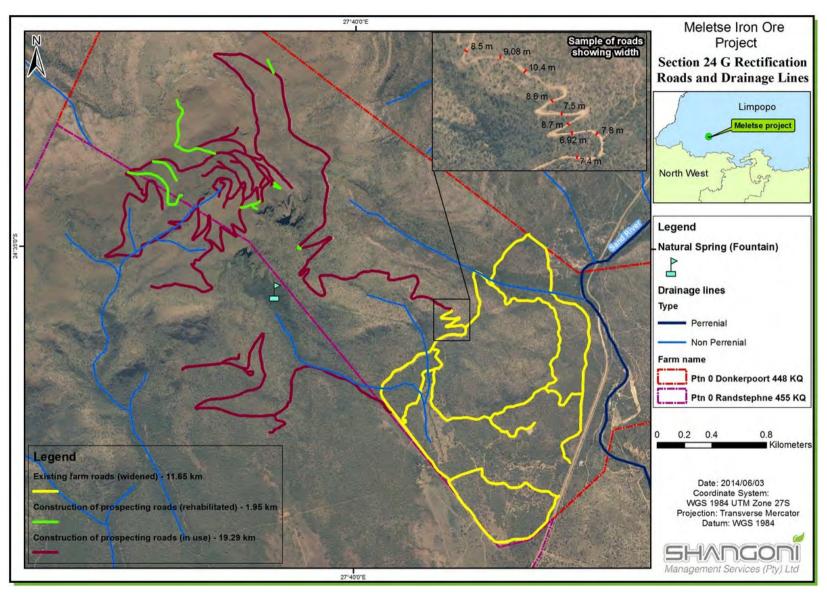


Figure 10: Map indicating roads interference with drainage lines



# 2.3 Hazardous chemical substances

Fuel required for the equipment used in road construction was obtained from a 1000 liter diesel bowser (tank on a trailer). The equipment was filled on site from the diesel bowser and when empty, the diesel tank was taken to town (Thabazimbi) and refuelled. During the prospecting phase, a temporary hazardous chemical storage facility (closed container) as well as a two mobile bulk diesel storage tanks were established on site, within the boundaries of the farm Donkerpoort 448KQ, remaining extent. The hazardous chemical storage facility and one of the diesel storage tanks has subsequently been removed.

# 2.4 Blasting

Civil blasting was undertaken for the purpose of road construction. As per blasting records provided by Aquila Steel, a total number of 12 blasts were undertaken during: Nov 2007; Nov 2008; Dec 2008; Jun 2010; Sep 2010; Nov 2010; Mar 2011; Apr 2011; May 2011; Jun 2011; Sep 2011. Of the 12 blasts undertaken, 7 blasts were for road construction and a further 5 blasts to free drill rods that were stuck. Explosives are brought onto site when blasting is to be undertaken (no on-site storage occurs). As indicated by Aquila Steel, no further blasting for road construction purposes will be undertaken.

# 2.5 Service delivery

# 2.5.1 Electricity

Electricity is sourced from the existing Eskom 22kV network. As confirmed by Aquila Steel, no lighting is provided on the project site (no activities are undertaken after dark).

# 2.5.2 Water management

#### 2.5.2.1 Potable Water

Approximately 100ℓ of water is utilised by employees as drinking water per day. During the gravel roads construction phase, 5ℓ bottles of water were bought on a daily basis for consumption by the construction crew. Domestic potable water was obtained from a borehole located on site (farm Donkerpoort 448 KQ), as previously discussed.

#### 2.5.2.2 Domestic wastewater

Two chemical toilets were previously available on site, but have been removed. The toilets were supplied and serviced by Coastal Hire. The contents thereof were disposed of at the local municipal sewage site.



# 2.5.2.3 Stormwater management

There are no stormwater management structures at the contravened site, including where the gravel roads were constructed through the drainage lines.

# 2.5.3 Waste management

General waste (non-hazardous waste) generated during the construction of the gravel roads was collected at a central area and disposed of at the Thabazimbi municipal waste site.

Biodegradable waste generated during prospecting activities was buried on the farm Donkerpoort 448KQ, remaining extent. This refers to waste generated by 4 workers that resided on the farm and 2 domestic workers.



# 3. NATURE AND EXTENT OF THE ENVIRONMENT AFFECTED BY ACTIVITY

# 3.1 Geology

The following information was extracted from the specialist report entitled "Resource Estimation Update of the Meletse Iron Ore Deposit – December 2012" which is available from the applicant (Aquila Steel) upon request.

# 3.1.1 Site specific description

The farm Donkerpoort 448KQ, remaining extent, and Randstephne 455KQ, remaining extent, fall in the Transvaal sub-basin of the Limpopo Province. Structural deformation on the Thabazimbi area has caused the Chuniespoort Group sediments to dip south at 50° to 60° and thrust repeat the BIF sequences.

According to a study "Resource Estimation Update of the Meletse Iron Ore Deposit – December 2012" conducted by Aquila Steel on the farm Donkerpoort 448KQ, remaining extent, and the farm Randstephne 455KQ, remaining extent, banded iron ore formations (BIFs) are developed in the Transvaal Supergroup within the Transvaal sub-basin of the Limpopo Province. The iron ore deposits occur within the Penge Formation of the Chuniespoort Group. Generally the iron content of the BIFs varies between 25% and 35% Fe and it is only where significant enrichment has taken place (upgrading the iron content to >60% FE) that the iron formation constitutes ore. The mechanism of the enrichment process is still not fully resolved. Supergene enrichment through replacement by iron minerals is a major factor, but the controls on that enrichment can be viable. Hydrothermal fluid flow, structural channelling / plumbing and paleo-weathering, leading to supergene upgrading at unconformities, play important roles in the enrichment process.

The Meletse Deposit is mainly underlain by clastic sedimentary rocks of the Waterberg Group, granite of the Bushveld Complex, BIF of the Penge Formation and dolomite of the Malmani Subgroup (Figure 11). In the south-western portion of the mapped area, the BIF of the Penge Formation is underlain by dolomite of the Malmani Subgroup, whilst to the north-east the BIF rests non-conformably on the granite of the Bushveld Complex and un-conformably on the sandstone of the Waterberg Group. Being a stratabound deposit, it is important to define the hanging- and footwall rocks associated with the deposit.



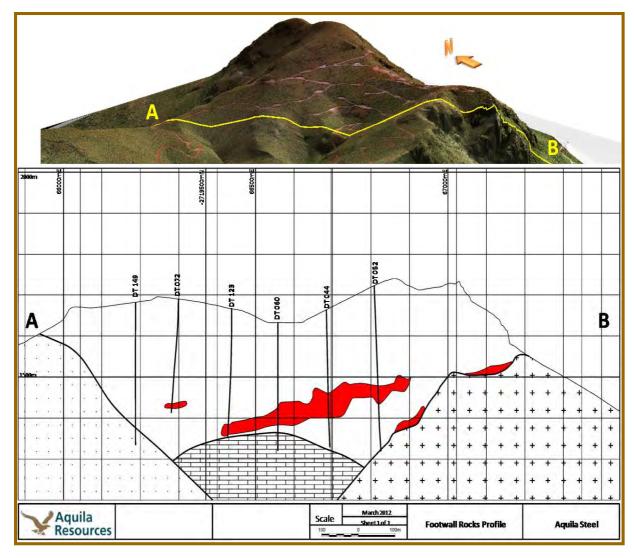


Figure 11: Profile indicating the spatial relationship of the footwall rocks

Lithostratigraphic data gathered from mapping and borehole logs of the sediments of the Chunniespoort Group were used to reconstruct a stratigraphical profile of the upper Malmani Subgroup and basal Penge Formation (Figure 12). Chert poor dolomites of the Frisco Formation are overlain by a transitional zone (locally referred to as the mixed zone). This zone comprises of an alteration of shale and chert macrobands and has an average thickness of 15-20 m. Nodular pyrite is present in the carbonaceous rich shale macrobands while contorted microbands of ankerite are developed in the chert macrobands.



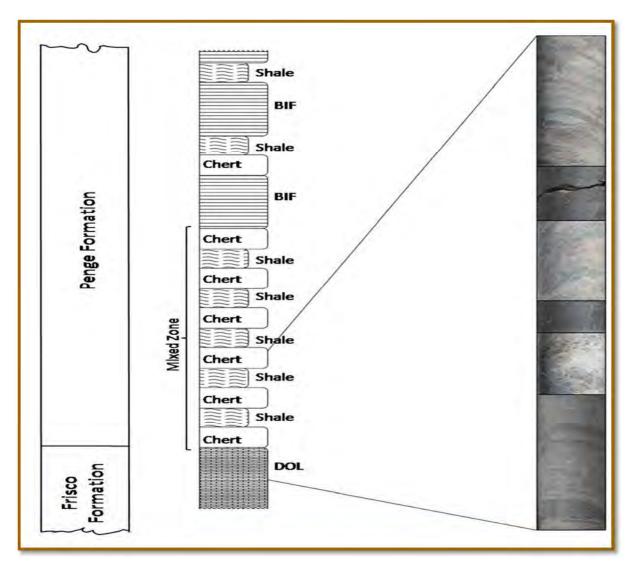


Figure 12: Lithostratigraphical profile of the mixed zone

Brecciation and metamorphism deformed the rocks of the mixed zone in close contact with the intrusive granite of the Bushveld Complex. Rock samples of the contact zone were analysed by MINTEK and they concluded that the samples represent a fine grained hornfels with quartz, chlorite, mica and pyrite. The rock samples can be described as a dark hornfels which lacks definite sedimentary structures. These fine-grained rocks are composed of a mosaic of equidimensional grains without preferred orientation and typically formed by contact metamorphism (MINTEK, May 2010).

The mixed zone is conformably overlain by metamorphosed iron oxide facies BIF. The basal BIF can be defined as a femicrite composed of macrocycles. In their complete form the macrocycles are composed of stilpnomelane lutite overlain by siderite microbanded chert, magnetite – siderite, and hematite-magnetite banded micritic iron formation. Well defined alteration of micro- and mesobands of iron oxides and chert is visible in outcrops and core. The iron oxides have a dark appearance while the chert is light grey in colour. The bedding character of the chert mesobands does vary from even, wavy to podded forms. The high grade iron ore lodes are developed in the basal iron oxide facies BIF protolith



and underlain by BIF and or granite in the proximity of the outcrops and by the mixed zone in the dip extent of the deposit.

Boreholes drilled on the SW dip extent of the sequence penetrated a magnetite bearing BIF. Mesoscopically the BIF is grey to light grey in colour and fine grained with dark iron oxide bands alternating with grey laminae composed of chert and iron silicates. The contacts between the laminae are often sharp but mostly poorly defined. The magnetite bearing BIF can be defined as a femicrite. The macrocycles composed of stilpnomelane lutite overlain by microbanded chert, iron oxide – iron silicates micritic iron formation are not as well defined as in the iron oxide facies BIF. The mineralogy also differs and this can be a result of a facies change and/or the submergence of the carbonate shelf.

#### 3.1.1.1 Structural setting

Field observations and drill hole results (undertaken and analysed between 2008 and 2013 by the Aquila Steel Exploration team) revealed a hydrothermal – supergene origin for the formation of the high grade Meletse deposit. The Meletse deposit is spatially associated with thrust faults that offset and duplicate the stratigraphy. These faults and associated splays provided critical pathways during their extensional episodes allowing movement of basinal brines and/or deeply circulating meteoric water into the BIF and the transformation of BIF to high-grade hematite ore.

Most high – grade iron deposits in Hamersley province are associated with normal faults that usually caused down-throw of the mineralised zones and burial by younger sediments. This was particularly favorable to the preservation of ore deposits. Compressional structures such as thrusts, as identified at Meletse, were far less favorable for the preservation of ore deposits, due to the uplift caused and subsequent erosion of the ore bodies. This might be one of the main reasons why there is such a major size difference between the Hamersley metalliferous deposits and deposits in the Thabazimbi iron ore province.

It is evident that the geometry and geological setting of the Meletse deposit is complex. Defining the structural controls in context with simplified deformation periods enabled the Aquila Steel exploration team to do a lateral and down dip interpretation of the geometry and extent of the iron ore lodes. Refer to Figure 13 for a regional map identifying the project area structurally evaluated.



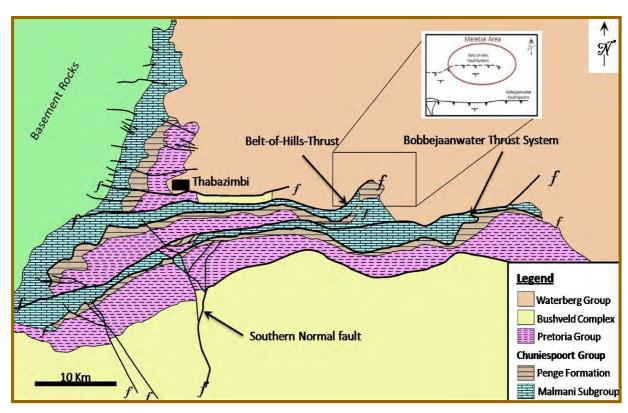


Figure 13: Regional map identifying the project area structurally evaluated

According to McCourt (1994) the craton scale Thabazimbi-Murchison Lineament developed during the 3100 Ma accretion event and continued its influence throughout Waterberg times and had a major influence on the development and setting of the Meletse Deposit. The structural deformation that influenced the Meletse Range started with the two major fault systems, namely the Bobbejaanwater and the Belt-of-Hills fault systems that duplicated and in some instances triplicated the rocks of the Transvaal Supergroup and the Bushveld complex. This period of deformation is defined as the end of the first episode.

Sediments of the Waterberg Group were deposited post the first episode and pre the second episode of deformation. The second period can be defined as the episode when the Gatkop over-thrust thrusted the chemical sediments of the Chuniespoort group over the clastic sediments of the Waterberg group. This changed the southerly dip orientation of the rocks to SSE.

The third episode, identified as the north directed stress field, gave rise to the formation of several synthetic thrusts all slaying off the Gatkop thrust plane that served as a floor thrust, creating the Meletse Thrust and the Northern Thrust. The Meletse thrust was intersected in two diamond boreholes (DT033 & DT075). Folding was initiated during the compressional phase, followed by a period of relaxation, leading to extensional structures.

Rotation of the regional stress field marks the beginning of the fourth episode. On a local scale the rotated stress field gave rise to the development of open folding with NW – SE trending axes. Smaller

synthetic thrust faults all verging to the north-east developed and changed the orientation of the BIF block, hosting the Meletse iron ore body. These thrust faults probably resulted in the staggered appearance of the Meletse Iron Ore Body.

The accumulated effect of the different deformation events are reflected in the present outcrop patterns of ore lodes as determined by the current topography of the area. A structural analysis of the present BIF orientation was evaluated "Resource Estimation Update of the Meletse Iron Ore Deposit – December 2012". Indications are that the total sample of poles to bedding planes lies in a girdle field with a centre of gravity (C) at 152°/12° and a significant concentration of poles, also lying in a girdle field, representing bedding planes dipping at 50° to 60° in a SSW through a southerly to a SSE and a less prominent concentration dipping at approximately 60° in a NNE direction.

## 3.1.1.2 Orebody geology

Ore genesis commenced during the early stages of the tectonic events that developed into the Belt of Hills thrust system with subsequent hydrothermal remobilization associated with the Gatkop, Meletse and Donkerpoort thrusts. Indications are that fold hinges, fault splays and the impervious shales of the mixed zone acted as aquitards. The Donkerpoort thrust resulted in the upliftment of a deep seated micro banded magnetite – chert - rich BIF that was transformed at the base of the sequence to a low to medium grade kenomagnetite – martite rich ore. Thus, the first hypogene, stage of ore formation presently identified at Meletse transformed magnetite – chert – rich BIF into a kenomagnetite - martite rich, low to medium grade ore. This proto – ore was at a later, deep meteoric stage oxidized to a hematite assemblage with the magnetite converted to martite. The inherently lower phosphorous content of the hematite rich, high grade ore could be an indication of meteoric descending waters resulting in a supergene alteration of the hematite – martite ores of the Penge Formation.

The Meletse orebody is composed of numerous irregular shaped, hard, lumpy, high-grade hematite rich iron ore lodes outcropping along a lateral extent of 600m as illustrated in Figure 14. Six hematite rich ore lodes defined in alphabetical order from west to east were identified during the detailed mapping exercise. Additional drilling information gathered during this campaign indicates that two of the lodes, namely C and D, coalesce at close proximity down-dip of the outcrop. These lodes were modelled as one lode and reported as lode C/D.

The iron ore lodes are defined as having an average a >50% Fe content. These lodes form irregular shaped bodies dipping off 40° on average to the SW and flatten to 20° at the dip extent of the lodes. Rafts of sterile protolith BIF and/or iron enriched BIF are developed within the ore envelopes and vary in thickness from one to three metres with a lateral extent of a few metres. The iron ore lodes bifurcate and coalesce in profile and are gently folded along strike. During the deformation episodes, synclinal structures were developed in two directions: NE-SW and SE-NW. Mineralisation occurred in the hinges of these synclinal structures causing the ore to locally thicken in the synclinal hinges. The relaxation episodes of the main compression stress fields resulted in the development of boudin structures.



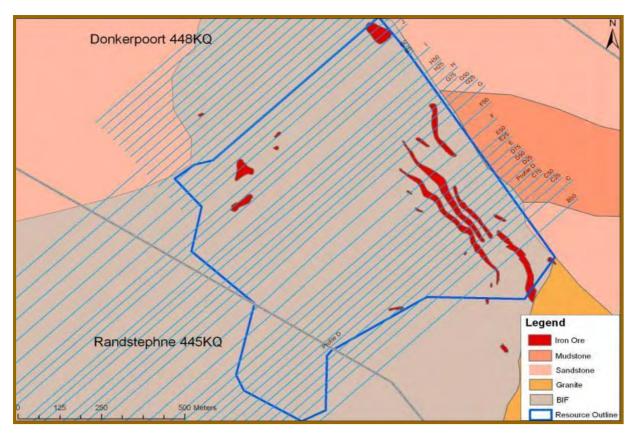


Figure 14: Identified iron ore lodes included in the resource statement as well as profile Lines and the Resource dimensions indicated in blue.

# 3.1.1.3 Presence of dykes, sills and faults

The following section was compiled using: Groundwater Complete. March 2014. Report on Geo-hydrological investigation as part of the EIA and EMP. The report is contained in Appendix F2.

A geophysical investigation was conducted in October 2011 and again in December 2013 for the purpose of identifying geological structures and intrusive features like dolerite dykes.

Geological structures such as dykes and faults are generally targeted when drilling for groundwater, as they are considered to act as preferred pathways for groundwater flow and mass transport (contamination). A total of 13 traverses were surveyed during which 17 anomalies were identified in the project area. The positions of the traverses and anomalies are indicated in Figure 15.



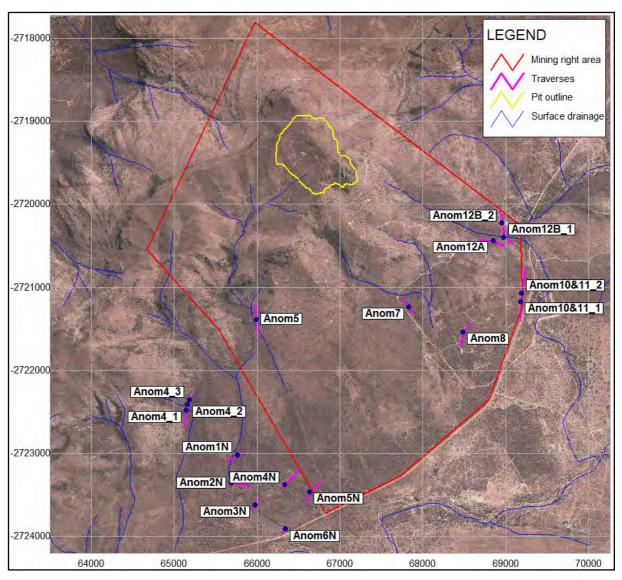


Figure 15: Positions of geophysical traverses and anomalies

# 3.1.2 Geology of the Gatkop Cave Site

The following was compiled using: Almond, J.E. March 2014. Palaeontological assessment: combined desktop & site visit report proposed Meletse Iron Ore Project on remaining extent of the farms Donkerpoort 448KQ and Randstephane 455KQ near Thabazimbi, Waterberg district, Limpopo province. The report is contained in Appendix F3.

Gatkop Cave<sup>9</sup> (24<sup>º</sup> 37' 05.2" S, 27<sup>º</sup> 39' 08.4" E) is a sizeable dolomitic cavern set in gently sloping, semi-arid thornveld terrain on the southern foothills of the Gatkop – Meletse mountain range, Limpopo Province. The site is situated some 25.5 km ESE of Thabazimbi and just north of the Zandrivierspoort – Donkerpoort dust road (refer locality as indicated in Figure 71). The winding Sandrivier, a tributary of



<sup>&</sup>lt;sup>9</sup> Gatkop Cave, as also referred to as Madimatla Cave within Anthropological section of report

the Crocodile River, flows 0.4 km to the south. The mouth of the cave emerges through dolomite crags at *c*. 1000m amsl and is well shaded by sizeable trees (Figure 19).

A detailed description of Gatkop Cave is outside of the brief for the present study. Therefore only a short, illustrated account of some of the geological features observed during the site visit is given here. The various types of caves and cave openings found in the Transvaal dolomites are illustrated by Brain (1958) (Figure 17). Gatkop Cave, situated on the gentle lower slopes of the Sandrivier Valley with a short, fairly wide and moderately sloping side entrance, is intermediate between Brain's types D and E. The approximate phase of development seen in Gatkop Cave is shown very schematically in Figure 18 (Brain and Watson 1992).

The regional dip of the Transvaal Supergroup rocks in the study region is towards the south. However, well-exposed medium-bedded Malmani dolomites at the cave entrance show a moderately steep local dip to the northeast (Figure 19). The south-facing entrance is littered with large, angular blocks of dolomite, some of which show well-developed elephant-skin weathering suggesting protracted exposure to the elements. The coarse rubble of fallen blocks with interstitial soil and hillwash continues down into a large main or entrance chamber, descending gently to the NE. The long axis of the chamber probably extends more-or-less NW-SE, parallel to the regional strike of the bedrocks (this orientation is assumed for the purposes of the present description). The main chamber of the cave is still largely open, with only a relatively limited sheet or cone of coarse, blocky debris extending into it from the short but fairly wide side entrance (Figure 20). The cave therefore does not appear to have been open to the exterior over a very long time interval in contrast with, for example, the cave systems in the Makapansgat Valley and at Swartkrans. Above a steeply sloping pile of large fallen blocks (collapse breccia) at the NW end of the main chamber there is a higher-lying subchamber that hosts a sizeable colony of bats. The floor is covered with a soft carpet of bat guano. One or more small, open shafts that might possibly lead to lower-lying chambers are present in the NW part of the main cave.

The Malmani Subgroup host rocks consist of medium- to thin-bedded, pale grey to buff dolomites, dipping to the northeast, with numerous bands, lenticles and clots of yellowish to grey secondary chert and occasional thin grey mudrocks (Figure 21). Bedding is generally tabular, but often obscured by high levels of tectonic brecciation related to the major thrust fault zone along which Gatkop Cave developed (Figure 22). Around the cave walls, especially on south-western side, the dolomite bedrock is obscured by a variety of cream to rusty-brown speleothems built of calc tufa or dripstone (sometimes termed travertine; cf Figure 23). These speleothems include dense arrays of small stalactites on the roof and ridged to rippled flowstones on the walls and floor (Figure 22). Sheets and irregular layers of flowstone locally overlie massive to bedded gravels and reddish, finer sediments on the cave floor (Figure 28). These fine ferruginous sediments are sometimes referred to as "cave earth". They probably consist of a mixture of allochthonous soil or hillwash plus aeolian dust together with autochthonous chert debris and terra rossa (i.e. iron-rich, insoluble residuum from dolomite dissolution). Thinly-laminated flowstone interbedded with reddish gravelly "cave earth" can be seen near the main entrance (Figure 26).



Good, water-worn sections through dolomite breccias are preserved against the south-western face of the main chamber, with recent reddish-brown, fine-grained silty "cave earth" deposits banked up against them (Figure 25). The dolomite clasts are variously subrounded to angular with a brownish matrix. These well-cemented breccias, either clast- or matrix-supported, clearly belong to an early phase of cave infilling. A meter-thick band of highly ferruginised and/or cave earth - rich breccia occurs within a downward-projecting roof buttress on the north-eastern wall of the main cave (Figure 27). It is unclear whether any extraneous clasts, such as gravels of banded ironstone, are present within this zone. Lenticles of rubbly, vuggy dolomite breccias with pebble- to cobble-sized clasts, some apparently rounded, are exposed in the same area.

The most substantial breccias observed in Gatkop Cave are found on the steep walls of the north-western "upper" or bat-infested subchamber in the NW. The exposures are heavily draped in cobwebs (Figure 23 and Figure 24). Some of the breccia bodies are plastered against the well-bedded Malmani dolomite bedrock. Other lenticles or bands of well-cemented breccia appear to be conformable and interbedded with the dolomitic bedrocks, but they probable infill bedding-parallel erosional cavities. The breccia clasts, exclusively composed of dolomite and chert, are poorly size-sorted, chaotically organised and often subrounded, implying a degree of water transport. These breccia exposures are ancient and water-worn. They are capped and cemented locally by pale, laminated flowstone.



Generally, caves in the Cradle of Humankind have followed six stages of cave formation: Stage 1: A cavern forms through the dissolution of dolomite in what is known as the phreatic zone, the zone beneath the water table. Its original shape is usually determined by faults or planes of weakness in the rock. Stage 2: The water table drops, usually because of the natural erosion, or cutting, of a nearby valley and the cave becomes filled Stage 1 Stage 2 with air. Stalactites and stalagmites now begin to form in the cave as surface water continues to percolate through the dolomite. Stage 3: Avens, or shafts, start forming and gradually begin to approach the surface. Stage 4: Avens break through to the surface. A talus cone may begin to form beneath the opening, filled with dirt, organic debris and bones of animals derived from the surface. If Stage 3 Stage 4 this cone becomes calcified by lime-bearing water dripping from the ceiling it is cemented into what we term 'cave breccia'. Stage 5: The cave is almost completely filled with cave breccia and the entrances begin to expand as a result of erosion. Stage 6: During this final stage erosion or mining has de-roofed the cave entirely and the bone-bearing breccia is exposed. Stage 6

Figure 16: Simplified scheme to explain the successive stages of cave formation, infilling and eventual exposure of cave sediments by erosion in dolomitic terrain (Hilton-Barber & Berger, 2004).



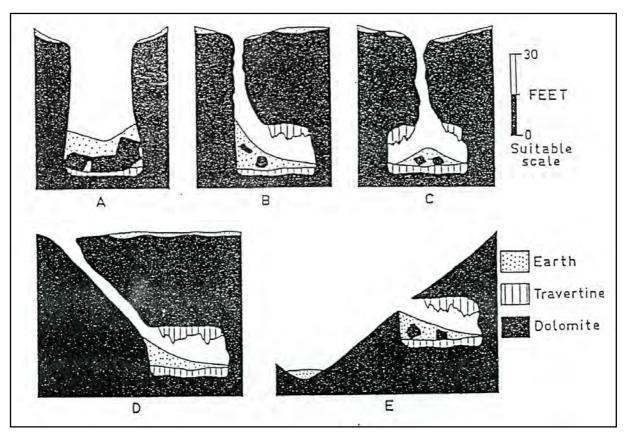


Figure 17: A range of different cave openings recognised in the Transvaal dolomites by Brain (1958). Gatkop Cave situated at a shallow depth below the gently sloping land surface is intermediate in form between types D and E.

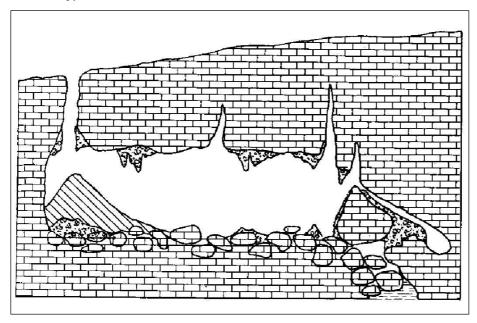


Figure 18: Schematic section through a dolomite cave at a similar early level of development to Gatkop Cave (Brain & Watson, 1992). As yet only a small portion of the main chamber has been infilled with sediment. The floor of the main chamber is carpeted with large dolomite blocks and residual chert inherited from the initial phase of cave formation by solution within the phreatic zone as well as subsequent roof collapse after the cave became air-filled. A relatively small debris cone composed of



angular dolomitic rubble as well as soil, gravel, animal and plant remains and other material washed in from the exterior extends across the chamber floor from the single entrance to one side. Parts of the floor, side walls and roof of the original cave are lined with calc tufa, deposited from solution, including sheet-like flowstones as well as tapering stalactites and stalagmites. Vertical shafts or avens enlarged by solution along joints or other fractures extend up towards the surface. Some of these will eventually break through to create secondary entrances to the cave.



Figure 19: South-facing entrance to Gatkop Cave showing rubble of fallen blocks extending into the cave interior and NE-dipping Malmani dolomites which host the cave system. The rusty old sign warns visitors of the danger of cave disease (histoplasmosis).



Figure 20: Main chamber of Gatkop Cave showing talus or scree of large, angular dolomite blocks extending from the entrance situated in the southwest. Petite archaeologist for scale.



Figure 21: Grey, thin-bedded, horizontally-laminated Malmani dolomites with slightly projecting, irregular lenticles and blobs of less soluble secondary chert (Scale = 16 cm).





Figure 22: South-western margin of the main chamber showing roof of grey, brecciated dolomite covered with dense arrays of small stalactites (mostly broken). The floor of the cave here is mantled with reddish-brown cave earth overlying smooth to rippled flowstone.



Figure 23: Side wall of upper chamber in NE showing thick (c. 1m) horizon of well-cemented early dolomite breccia that is apparently sandwiched between thin-bedded, steeply-dipping dolomite beds.





Figure 24: Detail of breccia horizon in previous figure showing chaotic, clast-supported fabric, with poorly- sorted, but moderately well-rounded dolomite and chert clasts. The pale banded rock above is carbonate flowstone that locally caps and cements together the underlying breccia.



Figure 25: Reddish-brown cave earth abutting against poorly-sorted, well-cemented dolomite breccia in the SW wall of the main chamber (hammer = 30 cm). Dolomite clasts here are angular to subrounded and clast- to matrix-supported (possible debris flow origin).



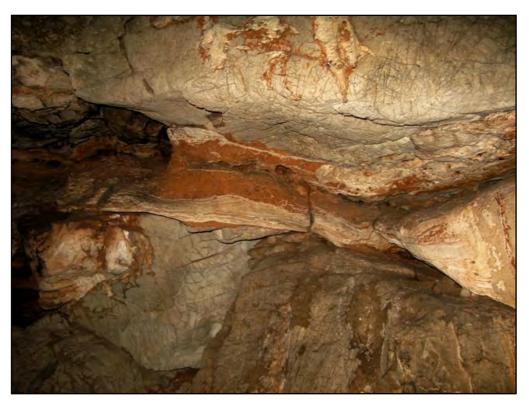


Figure 26: Thin lenticle of pale, well-laminated flowstone and reddish-brown, well-cemented, gravelly cave earth intercalated between thick-bedded grey dolomite near the main cave entrance.



Figure 27: Horizon (c. 1m thick) of highly ferruginised breccia and reddish-brown material (possibly cave earth) overlying well-bedded Malmani dolomites, NE margin of main chamber (Scale = 16 cm).



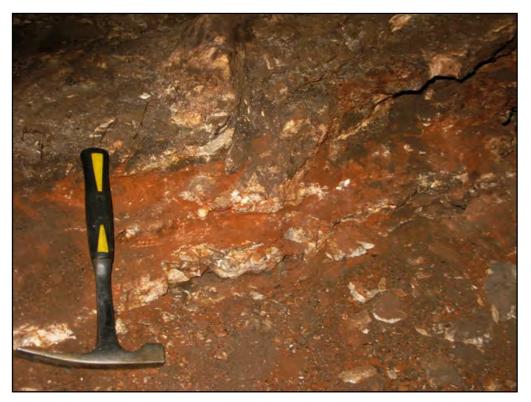


Figure 28: Horizon of dolomite gravels overlain by interbedded reddish cave earth and pale flowstone layers, NE end of the main chamber The succession is capped by a thicker, dirty flowstone horizon (hammer = 30 cm).

# 3.2 Climate

This section was compiled using information from the South African Weather Services – Climate Analysis of the proposed Mine at Thabazimbi (www.weathersa.co.za, 2012).

The Thabazimbi area may be described as semi-arid with an approximate Weinert N-value of 5,2 and a Thorn waite Moisture Index very close to -20. Daily temperatures are warm to hot, with a daily maximum average of 27 °C to 33 °C, but may reach as high as 45 °C. The daily minimum average varies between 8 °C and 12 °C. The average annual rainfall is approximately 645 mm, occurring in the summer as thunderstorms. Rainfall is strongly seasonal, with most rainfall occurring as thunder storms during the summer period from October to April.

#### 3.2.1 Rainfall

The Thabazimbi area has a mean annual precipitation (MAP) of 542 mm, of which 90% falls in the period October to April. The highest rainfall in a single day measured since 1981 was 223.5 mm on the 15th of February 2010. The table below shows the maximum rainfall per 24 hours recorded for each month in the year 2010. The MAP is reflected below.



Table 6: Maximum Rainfall in 24 Hour Period in 2010

Month	Min Rainfall (mm)	Max Rainfall (mm)	Avg Rainfall (mm)
January	2.8	222.5	115.0
February	4.3	223.5	71.2
March	6.3	198.4	71.1
April	0.8	95.5	23.4
May	0.0	31.8	7.8
June	0.0	55.1	12.0
July	0.0	10.2	2.6
August	0.0	7.1	1.2
September	0.0	68.3	12.5
October	0.0	81.3	32.9
November	1.8	129.0	71.0
December	1.0	164.8	87.3
Total	431.8	770.6	541.8

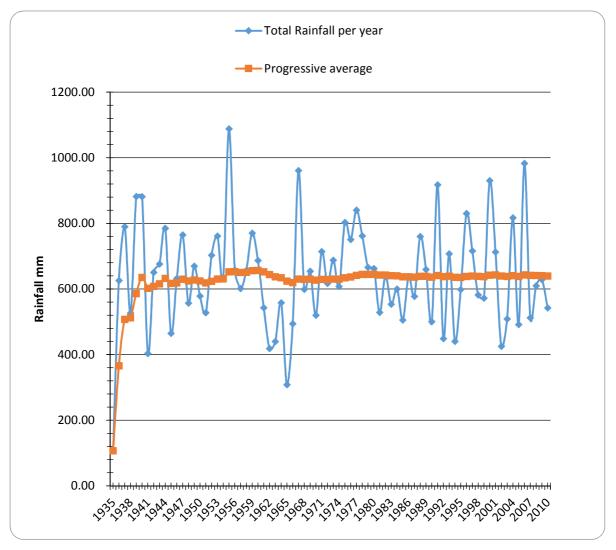


Figure 29: Average Rainfall from 1935 - 2010



## 3.2.1.1 Maximum rainfall intensities

Thabazimbi normally receives about 542 mm of rain per year, with most rainfall occurring mainly during midsummer. Thabazimbi receives the lowest rainfall (0mm) in June and the highest (106mm) in January.

# 3.2.2 Temperature

The Thabazimbi area lies in the summer rainfall region of the Bushveld. This area is known for its relatively high temperatures, with day temperatures that may rise above 40 °C in summer and drop to a few degrees below zero in winter. The mean maximum summer temperature is approximately 30 °C.

In summer, the mean temperature at 14h00 is  $30\,^{\circ}$ C, and in winter 21  $^{\circ}$ C. At 08h00, the mean temperature is 23  $^{\circ}$ C in summer and 8  $^{\circ}$ C in winter. The mean monthly maximum and minimum temperatures are shown in the table below.

Table 7: Mean monthly maximum and minimum temperatures

Month	Max. Temperature (°C)	Min. Temperature (°C)
January	33,4	20,7
February	32,3	21,1
March	31,9	19,0
April	29,3	16,6
May	27,3	12,8
June	25,1	10,1
July	25,1	11,1
August	27,9	14,4
September	29,8	17,6
October	31,9	19,9
November	32,0	20,4
December	31,6	20,7

# 3.2.3 Evaporation

Refer to the table below for the monthly evaporation measured at station A4E001 for an S class pan located approximately 56 km north-east of the contravened site.

Table 8: Average annual evaporation

Date	Evaporation (mm)
January	170.1
February	147.5
March	140.1
April	112.0

Date	Evaporation (mm)
May	93.8
June	76.9
July	86.7
August	114.1
September	149.5
October	180.4
November	169.7
December	170.1
Annual	1630.2

The mean annual evaporation is 1630.2mm with monthly extreme values of 170.1mm (maximum) in December and January and 76.9mm (minimum) in June.

## 3.2.4 Wind

Figure 30 presents wind roses indicating the mean wind direction. From the wind roses it is evident that the mean wind direction is from North-east to South-east. During the winter months of April, May, June and July, the wind roses indicate that the wind direction sometimes changes slightly to South-West. The mean monthly wind direction and speeds are shown in the figures below. Statistics are based on observations taken between 12/2011 - 6/2013, daily from 7am to 7pm local time. The prevailing wind direction is north-east, at a speed averaging 2.5m/s. Gale force winds occur very rarely.







Figure 30: Wind roses indicating the mean wind direction from January to December



# 3.3 Topography

## 3.3.1 Regional Description

The contravened site is located in the Waterberg District which derives its name from the Waterberg Mountains, given by the indigenous people of the area due to the many water streams flowing down the mountain slopes. The region is generally mountainous, particularly towards the central to eastern side of the district municipal area. The various mountain ranges include the Rooiberg Mountains, Boshoffs Mountain, Sandriviers Mountain, Kransberg Mountain, Witfonteinrant, Berg van Winde and Elandsberge. The eastern mountain ranges form part of the Waterberg Mountain range forming a central mountain plateau. It is linked to the Sebetiela Mountains in the south-eastern part of the Waterberg District, which in turn is linked to the Great Escarpment of the Drakensberg Mountain range by the Strydpoort Mountains.

#### 3.3.2 Site specific description

The contravened site is located within the Meletse mountain range and the majority of the site is mountainous. The Meletse peak, located within the northern part of the Donkerpoort property, is 1862,2 metres above mean sea level (mamsl). A number of other peaks are also located on the contravened site ranging from 1170 mamsl to 1582 mamsl. The site is characterised by valleys and steep slopes originating from the higher peaks. From there the topography gradually flattens towards the south, to an average height of 1000 mamsl.

Refer to Figure 31 for the topographical map of the contravened site.



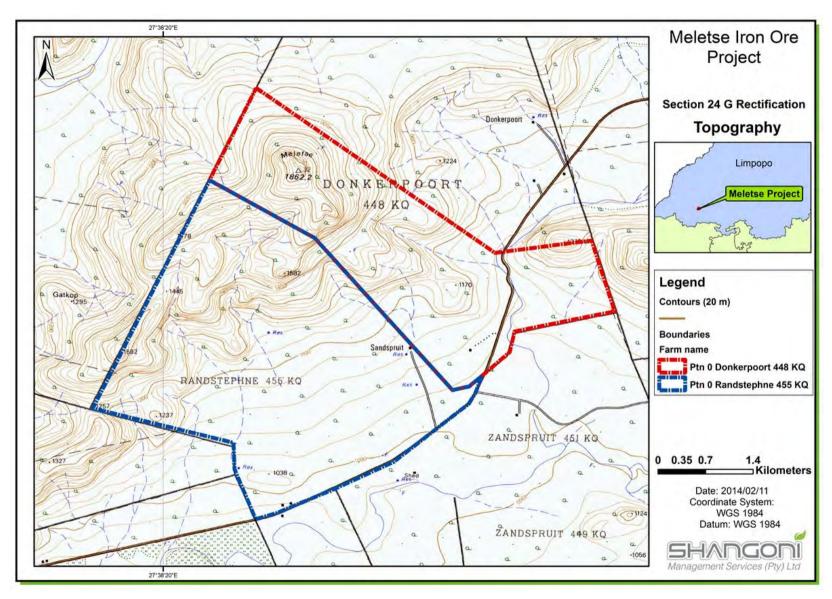


Figure 31: Map illustrating Topography of the contravened site



#### 3.4 Soils

The following information was obtained from: Zone Land Solutions. June 2014. Soils and Agricultural Impact Assessment, Prepared as part of a Section 24G rectification application, Proposed Meletse Iron Ore Project. The report is available in Appendix F13.

The farm extends up the northerly slopes of the valley from an altitude of around 1,000 meters to an altitude at the mountain top of 1,862 meters. Slopes in the valley are up to approximately 5%, with very steep, mountainous slopes above. The prospecting roads were constructed only in the mountainous areas above the valley. The geology of the area is quartzite, shale and dolomite of the Transvaal Supergroup. The iron ore occurs in the Penge Iron Formation, along the contact with the underlying shales and dolomites.

The land type classification is a nationwide survey that groups areas of similar soil, terrain and climate conditions into different land types. There are two land types across the prospecting site (see *Figure 32*). Ae239 occurs within the valley and lb308 occurs in the mountainous area above. The soils of Ae239 are moderately deep, well drained, red, structureless sandy loams of the Hutton soil form on underlying rock. Land type lb308 is dominated mostly by rock outcrop and extremely shallow soils on underlying rock. A summary detailing soil data for the land types is provided below. The field investigation confirmed the dominant Hutton soil type of the valley slopes. These soils become shallower and more rocky the further they are up the valley slope towards the beginning of the steeper mountainous terrain of land type lb308. The soils along the prospecting road are overwhelmingly rock outcrops and shallow Mispah soils. In isolated places on these slopes stony colluvial material has accumulated to give deeper soils, but with a very high course fraction (rock) content. The vegetation classification for the valley area is Western Sandy Bushveld, and for the mountainous area is Waterberg Mountain Bushveld. Parts of the valley area have been cleared in the past and regrowth of pioneer species has since taken place. The mountain areas are fairly pristine. There is some erosion along old roads in the valley area. There is no evidence of significant other land degradation on the site.

Table 9: Land type soil data for site .

Land type	Land capability class	Soil series (forms)	Depth (cm)	Clay % A horizon	Clay % B horizon	Depth limiting layer	% of land type
Ae239	3	Hutton	60-120	15-30	20-35	R, so	36
		Hutton	70-120	25-40	65-45	R, so	21
		Hutton	25-60	15-30	20-35	R, so	15
		Rock outcrop	0			R	6
		Mispah	10-30	10-25		R	5
		Hutton	40-120	6-12	10-15	R, so	5
		Hutton	40-120	6-12	10-15	R, so	5
lb308	8	Rock outcrop	0			R	60
		Mispah .	10-30	10-20	15-30	R	11
		Hutton	30-60	10-25	15-30	R, so	9
		Hutton	65-100	10-25		R, so	5
		Glenrosa	10-30	8-15		lo	5
		Glenrosa	10-30	15-22		lo	5

Land capability classes: 3 = moderate potential arable land; 8 = non-utilisable wilderness land.

Depth limiting layers: R = hard rock; so = partially weathered bedrock; lo = partially weathered bedrock (softer).



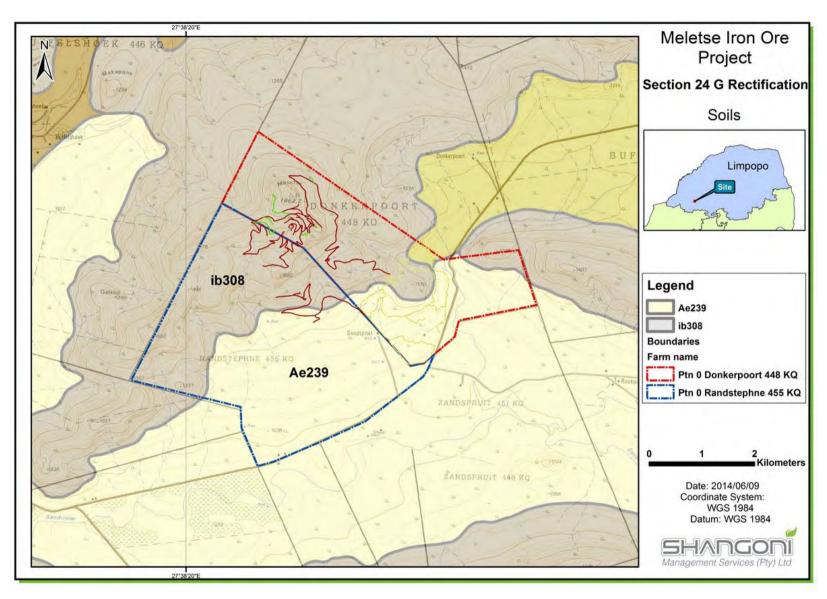


Figure 32: Map depicting the soil properties of the contravened site



# 3.5 Land use and land capability

The following information was obtained from: Zone Land Solutions. June 2014. Soils and Agricultural Impact Assessment, Prepared as part of a Section 24G rectification application, Proposed Meletse Iron Ore Project. The report is available in Appendix F13.

# 3.5.1 Agricultural capability

Land capability is the combination of soil suitability and climate factors. The valley area has a land capability classification, on the 8 category scale, of class 3 - moderate potential arable land. The mountain areas has a land capability classification of class 8 - non-utilisable wilderness land, due to the mountainous terrain and the rock. Cultivation of the valley slopes is possible, but without irrigation is likely to be marginal. The upper parts of the valley slopes are limited by shallower soils and high rock content. The grazing capacity of the land is given as 11-17 hectares per animal unit.

#### 3.5.2 Land use and development at the site

The farm is located on the boundary between grain and cattle farming regions. Most farms in the surrounding area are game farms. Historical aerial imagery to 2007 shows that some bush areas have been cleared in the past but no formal cultivation has taken place on the farm since 2007. A small area lower in the valley within 3 km of the prospecting area has been developed to centre pivot irrigation. In comparison to the farm on which the prospecting area is located, these irrigation lands are on the flatter floor of the valley where soils are less rocky and where irrigation water is available.

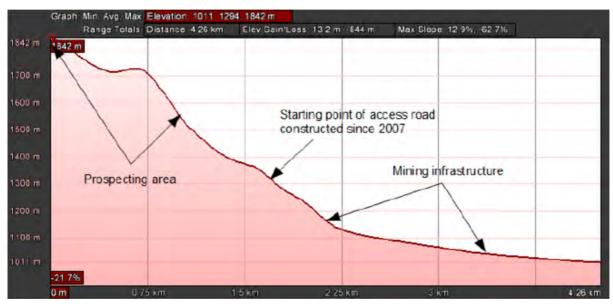


Figure 33. Elevation profile from top of peak to farm boundary and showing the elevation positions of different elements.



#### Possible agricultural land use options for the site

To develop viable cropping on the farm would require irrigation water. Although there are existing boreholes on the farm, they do not deliver quantities of water that are viable for irrigation. The land is therefore limited to grazing for game and cattle.

# 3.6 Vegetation

The following information was obtained from the report: Pachnoda. February 2014. An ecological evaluation for the Aguila Steel project. The report is available under Appendix F1.

#### 3.6.1 Regional Vegetation Description

The farms Donkerpoort 448KQ, remaining extent, and Randstephne 455KQ, remaining extent, correspond to the Savanna Biome and more particularly to the Central Bushveld Bioregion as defined by Mucina & Rutherford (2006). The site incorporates three ecological types known as the (1) Waterberg Mountain Bushveld, (2) Central Sandy Bushveld and (3) Western Sandy Bushveld (Mucina & Rutherford, 2006).

#### Waterberg Mountain Bushveld

This vegetation type is predominantly confined to the northern half of the site and is restricted to the Waterberg Mountains, including a number of outlier hills and ridges of the Vlieëpoortberge and Boshofsberge near Thabazimbi. The floristic composition is complex and varies from *Faurea saligna – Protea caffra* bushveld on the high slopes, grading into mixed *Diplorhynchus condylocarpon* woodland on the mid and foot slopes to *Burkea africana – Terminalia sericea* savanna on the low-lying valleys and areas of deep sand.

This unit is not threatened since more than 9 % is formally conserved within the Marakele National Park and Moepel Nature Reserve. More than 3 % of this woodland type is transformed by cultivation.

#### **Central Sandy Bushveld**

This vegetation type is confined to a small area on the eastern extremity of the site. It extends in a broad arc south of the Springbokvlakte from the Pilanesberg region in the west, through Hammanskraal and Groblersdal to GaMasemola in the east. It is located on low undulating areas dominated by tall, deciduous woodland on deep sandy soils (typified by *Terminalia sericea* and *Burkea africana*). On shallow, gravel soils the floristic composition consists of *Combretum apiculatum* while *Acacia, Ziziphus* and *Euclea* are prominent on areas consisting of eutrophic soils.

The Central Sandy Bushveld is "Vulnerable" with less than 3 % conserved in a number of scattered nature reserves. It is transformed by cultivation and urbanisation.



#### **Western Sandy Bushveld**

This vegetation type is dominant on the low-lying areas of the study site and is typical of the sandy flats and undulating plains west of the Waterberg Mountains and north towards Steenbokpan. The vegetation structure varies from a tall, open canopy to low woodland dominated by broad-leaved and microphyllous species on soils underlain by arenite and sandstone. Noteworthy species include *Acacia erubescens* and *Combretum apiculatum*, with *Terminalia sericea* on areas comprising of deep sandy soils.

The Western Sandy Bushveld is also "Least Threatened" with about 6 % statutorily conserved in the Marakele National Park.

Refer to Figure 34 for a map illustrating the vegetation units associated with the contravened site.

The table below summarises a list of plant species characteristic of the Waterberg Mountain Bushveld, Central and Western Sandy Bushveld vegetation types.

Table 10: A list of the characteristic plant species for each stratum (e.g. grass, forb & woody layer) representing three vegetation types (Mucina & Rutherford, 2006).

Waterberg Mountain Bushveld				
Grassy Layer	Forb Layer	Woody Layer		
Loudetia simplex, Trachypogon spicatus, Themeda triandra, Enneapogon pretoriensis, Heteropogon contortus, Tristachya leucothrix.	<b>Herbs</b> : Xerophyta retinervis, Berkheya insignis, Hibiscus meyeri.	Tall trees: Acacia robusta.  Small trees: Acacia caffra, Burkea africana, Croton gratissimus, Combretum apiculatum, C. zeyheri, C. molle, Faurea saligna, Heteropyxis natalensis, Protea caffra, Englerophytum magalismontanum, Ochna pretoriensis.  Tall shrubs: Diplorhynchus condylocarpon, Elephantorrhiza burkei, Dichrostachys cinerea, Vitex rehmannii.  Low shrubs: Barleria affinis, Searsia rigida subsp. dentata.  Woody climbers: Ancylobothrys capensis.		
	Central Sandy Bushve	ld		
Grassy Layer	Forb Layer	Woody Layer		
Brachiaria nigropedata, Eragrostis pallens, Panicum maximum, Loudetia simplex.	Herbs: Indigofera daleoides, Justicia anagalloides, Kyphocarpa angustifolia.	Tall trees: Acacia burkei, Sclerocarya birrea subsp. cafra.		



		Small trees: Burkea africana, Combretum apiculatum, C. zeyheri, Terminalia sericea, Peltophorum africanum.  Tall shrubs: Grewia bicolour, G. monticola.  Low shrubs: Agathisanthemum bojeri, Indigofera filipes.
	Western Sandy Bushve	eld
Grassy Layer	Forb Layer	Woody Layer
Anthephora pubescens, Digitaria eriantha subsp. eriantha, Eragrostis pallens, Eragrostis rigidior, Schmidtia pappophoroides, Aristida congesta, Aristida diffusa, Aristida stipitata subsp. graciliflora, Eragrostis superba, Panicum maximum, Perotis patens.	Blepharis integrifolia, Chamaecrista absus, Evolvulus alsinoides, Geigeria burkei, Kyphocarpha angustifolia, Limeum fenestratum, Limeum viscosum, Lophiocarpus tenuissimus, Monsonia angustifolia, Clerodendrum ternatum, Indigofera filipes, Justicia flava.	Trees: Acacia erioloba, Acacia nigrescens, Sclerocarya birrea subsp. caffra, Acacia erubescens, Acacia mellifera subsp. detinens, Acacia nilotica, Acacia tortilis subsp. heteracantha, Combretum apiculatum, Combretum imberbe, Terminalia sericea, Combretum zeyheri, Lannea discolor, Ochna pulchra, Peltophorum africanum.  Tall shrubs: Combretum hereroense, Euclea undulate, Coptosperma supra – axillare, Dichrostachys cinerea, Grewia bicolor, Grewia flava, Grewia monicola.



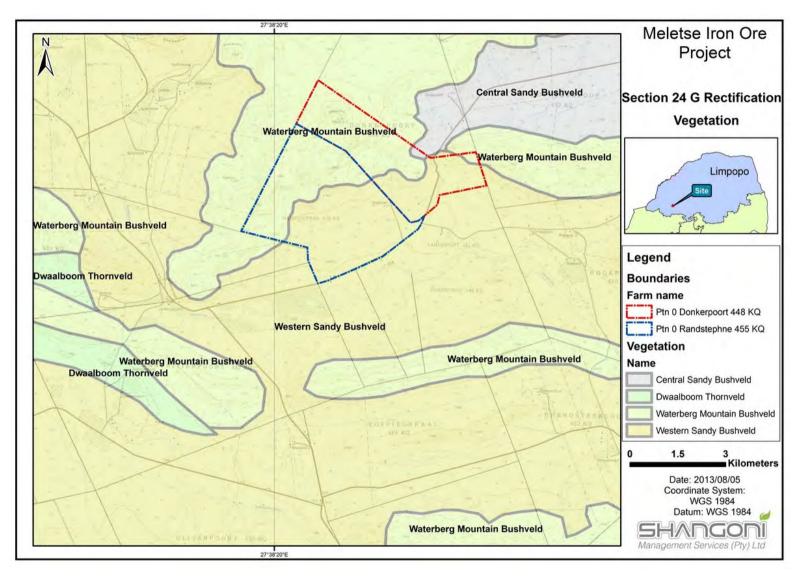


Figure 34: Map illustrating vegetation units at the contravened site



# 3.6.2 Vegetation on study area

#### 3.6.2.1 Vegetation Units

The dominant vegetation composition and structure on the contravened site comprises of five major communities simulated by environmental drivers such as rock cover and soil depth, altitude, slope and prominent geology:

- 1. Open *Protea caffra Loudetia flavida* savannoid grassland on mountain plateaus:
  - (a) Open Loudetia flavida Monocymbium ceresiiforme crest grassland; and
  - (b) Open *Protea caffra Bewsia biflora* savannoid grassland on upper slopes.
- 2. Open *Acacia caffra Combretum molle Diheteropogon amplectens* woodland on steep rocky slopes;
- 3. Dense *Combretum apiculatum Dichrostachys cinerea Panicum maximum* woodland on gradual slopes and pediments:
  - (a) Open Dichrostachys cinerea Nidorella resedifolia shrubland on sandy soils;
  - (b) Combretum apiculatum Panicum maximum woodland on rocky soils;
  - (c) Tall Spirostachys africana Dicliptera eenii woodland along drainage lines; and
  - (d) Open Acacia erioloba Panicum maximum woodland on deep sandy soils.
- 4. Mimusops zeyheri Calodendron capense Afromontane forest; and
- 5. *Croton gratissimus Kirkia acuminata* woodland on dolomite hills.

In general, Combretum apiculatum, Loudetia flavida, Panicum maximum, Diheteropogon amplectens and Acacia caffra were the dominant taxa observed on the study site.

Table 11: The surface area (ha) of each defined vegetation unit in relation to project site.

Major Vegetation Community	Area (ha	%
1. Open Protea caffra – Loudetia flavida savannoid grassland	350.51	16.44%
2. Open Acacia caffra – Combretum molle – Diheteropogon amplectens woodland	737.50	34.59%
3. Dense Combretum apiculatum – Dichrostachys cinerea – Panicum maximum woodland	953.26	44.70%
4. Mimusops zeyheri – Calodendron capense Afromontane forest	36.91	1.73%
5. Croton gratissimus – Kirkia acuminata woodland on dolomite hills	54.20	2.54%
Vegetation Sub-community	Area (ha	%
1a. Open Loudetia flavida – Monocymbium ceresiiforme crest grassland	66.18	3.10%
1b. Open Protea caffra – Bewsia biflora savannoid grassland	284.34	13.33%
3a. Open Dichrostachys cinerea-Nidorella resedifolia shrubland	181.33	8.50%



3b. Combretum apiculatum – Panicum maximum woodland	559.28	26.23%
3c. Tall Spirostachys africana – Dicliptera eenii woodland	87.91	4.12%
3d. Open Acacia erioloba-Panicum maximum woodland	124.73	5.85%
Total:	2132.38	100.00

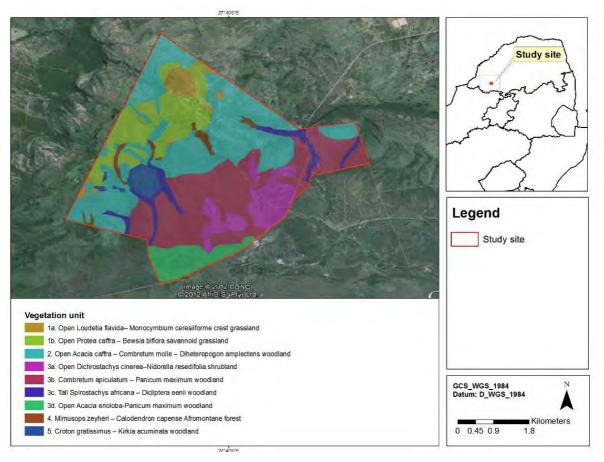


Figure 35: A map illustrating the vegetation units identified on the contravened site

#### Open Protea caffra - Loudetia flavida savannoid grassland on mountain plateaus

This community is confined to the upper slopes (above 1 600 m) and mountain plateau of the study site, and is described as an open *Protea* savannoid grassland with a "sourish" composition of "climax" species. The stunted structure of the canopy layer and surface extent of the graminoid cover are regulated by frequent fires and environmental extremities induced by high winds and altitude. Although the total species richness is not as high when compared to the other communities, it is considered unique to the region with more than 50 % of its composition absent from the typical "bushveld" units. In addition, it supports a high richness of graminoid species (45 %). It consists of two discrete alliances depending on the presence/absence of woody species and the extent of the grassy cover, as given below:



(a) Open Loudetia flavida – Monocymbium ceresiiforme crest grassland: A species-rich community confined to the summit of the mountain plateau and earmarked by a well-defined primary composition of 'decreaser' grass taxa such as Loudetia flavida, Monocymbium ceresiiforme, Trachypogon spicatus and Tristachya biseriata. It is equally rich in forb taxa, not only at a species level, but also represented by a high diversity of plant families pertaining to the Asteraceae (Helichrysum spp., Berkheya carlinopsis, Athrixia elata), Crassulaceae, Lamiaceae, Iridaceae (e.g. Tritonia nelsonii, Gladiolus ecklonii, G. rehmannii and G. crassifolius) and Orchidaceae (Eulophia bainesii).

The increased diversity of plant taxa is encouraged by the high spatial heterogeneity provided by the numerous outcrops and rock promontories. These provide stable microclimatic conditions for the colonisation of "shade-tolerant" and lithophytic taxa that comprises of a number of pteridophytes (e.g. *Cheilanthes hirta* var. *hirta*, *C. deltoidea* subsp. *silicicola*, *C. involuta* var. *obscura* and *Asplenium cordatum*) including *Streptocarpus vandeleurii* and dwarf succulents such as *Adromischus umbraticola*.

(b) Open Protea caffra – Bewsia biflora savannoid grassland on upper slopes: This alliance is compositionally similar to the abovementioned community with the main difference being the presence of a woody layer that is dominated by a monospecific stand of Protea caffra subsp. caffra. Other noteworthy woody species pertaining to this alliance include Englerophytum magalismontanum, Protea roupelliae subsp. roupelliae, Searsia magalismontana subsp. magalismontana and Faurea saligna.

The conservation importance of this community is <u>exceptionally high</u>. It sustains a faunal community with strong Afrotropical highland (Drakensberg) affinities that is either directly dependant on the occurrence of the *Protea* stands (e.g. Malachite Sunbird *Nectarinia famosa*) or indirectly confined to the grassland structure and altitude of the area (e.g. Buff-streaked Chat *Oenanthe bifasciata*). Despite the occurrence of unique faunas, this community supports one of a few populations of the range-restricted and threatened ("vulnerable") fern, *Cheilanthes deltoidea* subsp. *silicicola*. Unfortunately, a large section of this community has recently been fragmented by a network of roads used during prospecting.

# Open *Acacia caffra – Combretum molle – Diheteropogon amplectens* woodland on steep rocky slopes

This community is widespread on the steep mid-slopes (c. 1 100 – 1 600 m) of the study site and conforms to an open woody canopy dominated by *Acacia caffra, Combretum molle, C. zeyheri* and *Heteropyxis natalensis*. In addition, the herbaceous layer is rich in 'decreaser' grass taxa and is dominated by *Diheteropogon amplectens*, *Melinis nerviglumis*, *Setaria sphacelata* var. *torta* and *Themeda triandra*. Subtle differences in the dominant basal composition is apparent along ill-defined drainage lines as evidenced by the over-dominance of *Setaria lindenbergiana*.



This woodland is common on steep slopes of 45° or more and forms a distinct eco-tone or transitional community between the grasslands of the mountain summit and the lower-lying *Combretum apiculatum* woodlands. Therefore, its composition is shared with both of these floristic units.

# Dense *Combretum apiculatum – Dichrostachys cinerea – Panicum maximum* woodland on gradual slopes and pediments

This unit is widespread on the contravened site and is dominant on the lower-lying plains and pediments. It is earmarked by three sub-communities of different structure depending on the spatial distribution of the soil texture in the landscape and the proximity of surface hydrological features such as drainage lines.

- (a) Open *Dichrostachys cinerea Nidorella resedifolia* shrubland on sandy soils: It is described as a species-poor alliance restricted to areas where past disturbances took place and therefore the prevalence of many "bush encroacher" taxa (e.g. *Acacia tortilis & Dichrostachys cinerea*). When typical woodland (of the original composition and structure) is cleared, especially on sandy soils with a low inherent potential towards erosion, this alliance conforms to a short microphyllous woodland typified by *Dichrostachys cinerea* with a herbaceous layer consisting of pioneer and annual species (*Pogonarthria squarrosa*, *Conyza albida*, *Nidorella resedifolia*). If the disturbance regime involves the removal of the A-horizon (during high precipitation events) of the soil profile, thereby exposing the underlying E-horizon, a characteristic "thornveld" alliance of *Acacia* species tend to dominate the landscape. The latter composition is mainly confined to heavy, clay soils and is more prominent on the eastern section of the study site.
- (b) Combretum apiculatum Panicum maximum woodland on rocky soils: This alliance is dominant on the study site and is typified by a fairly dense canopy of Combretum apiculatum and Diplorhynchus condylocarpon woodland. The grassy layer consists of secondary species (mainly Eragrostis spp.) apart from the apparent dominance of Loudetia flavida. It is an under-utilised community confined to rocky soils.
- (c) Tall Spirostachys africana Dicliptera eenii woodland along drainage lines: This community is restricted to the drainage lines (including a perennial tributary of the Sand River), and conforms to a tall woodland with a poorly defined graminoid layer. Typical canopy constituents include Spirostachys africana and Combretum imberbe, and noteworthy shade-tolerant species such as Dicliptera eenii, Achyranthes aspera, Barleria obtusa, B. saxatilis and Ledebouria cf. atropurpurea.
- (d) Open *Acacia erioloba Panicum maximum* woodland on deep sandy soils: This community is restricted to the western low-lying parts of the study site, and typified by a distinct canopy of tall *Acacia erioloba*, *Peltophorum africanum* and *Terminalia sericea* woodland. However, the herbaceous layer is earmarked by species-poor compositions that include many weed taxa such



as *Teucrium trifidum* and *Pentarrhinum insipidum*. This unit is heavily utilised by large herbivores due to the high palatability of the graminoid layer (mainly dominated by *Panicum maximum*).

#### Mimusops zeyheri – Calodendron capense Afromontane forest

This community is restricted to a few isolated patches of Afrotemperate forest confined to secluded kloofs and ravines with south-facing aspects. It is earmarked by a tall canopy (>15 m) of *Calodendron capense, Mimusops zeyheri, Celtis africana* and *Chaetachme aristata,* and a poorly developed herbaceous layer.

This community is unique in the sense that it is embedded within the Savanna Biome and forms a "high-altitude" parallel to the forest patches of the southern and eastern Cape Provinces (Mucina & Rutherford, 2006) based on their underlying impoverished floristic compositions. However, it is important due to its patchy and fragmented spatial distribution in the region.

#### Croton gratissimus – Kirkia acuminata woodland on dolomite hills

This community is restricted to the dolomite outcrops on the contravened site. It is described as a closed woodland with a tall and distinct canopy of *Kirkia acuminata* and *Croton gratissimus*. The floristic composition differs markedly from the other woodland units on the study site due to the peculiar occurrence of pteridophytes and Acanthaceae taxa with a high fidelity towards dolomite lithologies (e.g. *Cheilanthes cf. pentagona* and *Actiniopteris dimorpha* subsp. *dimorpha*). Other noteworthy taxa include *Barleria lancifolia, Pouzolzia mixta* and *Obetia tenax*.

#### 3.6.2.2 Red Data Plant

Table 12 provides a list of Red Data and Orange Listed species with known distribution patterns sympatric (QDS: 2427DA) to the contravened area, and an indication of their probability of occurrence.

Table 12: Red Data and Orange Listed plant species likely to occur on the study site based on the occurrence of suitable habitat. Flowering season, habitat preference and probability of occurrence are provided (conservation status according to Raimondo et al. (2009)). Species highlighted in grey were confirmed during the survey.

Species	Flowering	Habitat	Probability of occurrence	Conservation
	Season			Status
Red Data Listed	(threatened tax	(a)		
Cyphostemma	October -	In shade of trees among	Possible, however not	Vulnerable
hardyi	December	boulders and outcrops	encountered	
Cheilanthes		Northern aspects of rock	Confirmed from the open	Vulnerable
deltoidea		crevices (phonolithic lava of	Loudetia flavida –	
subsp. silicicola		the Waterberg Group). Also on	Monocymbium ceresiiforme	
		chert outcrops	crest grassland	



Orange Listed					
Adromischus	comischus November Rock crevices Confirmed from the Loudetia		Taxonomically		
umbraticola	-December		flavida – Monocymbium	Uncertain	
subsp. ramosus			ceresiiforme crest grassland	(DDT)	
Boophone	October -	Grassland and bushveld	A widespread species on	Declining	
disticha	January		rocky substrates		
Freylinia tropica	July - June	Riverbanks and streams (at	Absent, not likely to occur	Rare	
		1 800 m)			
Myrothamnus	November	On sandstone or granite	High, suitable habitat	Taxonomically	
flabellifolius	- May	outcrops with shallow soils	observed from sheetrock	Uncertain	
			(confined to the Acacia	(DDT)	
			caffra – Combretum molle –		
			Diheteropogon amplectens		
			woodland on steep rocky		
			slopes)		

#### **Red Listed Species**

The threatened ("vulnerable"; Raimondo *et. al.*, 2009) pteridophyte *Cheilanthes deltoidea* subsp. *silicicola* was confirmed from the *Loudetia flavida* – *Monocymbium ceresiiforme* grassland of the mountain summit. This species is restricted to the rock crevices and sheltered soil pockets of the large boulders that are located in open grassland. Given its small size and the habit of shrivelling during dry periods, it is often overlooked (Crouch *et. al*, 2011). It is currently known from only nine localities (excluding the population on the contravened site) with an area of occupancy of 2-5 km². The estimated total population size is between 600 – 800 individuals (Raimondo *et al.*, 2009).

#### **Orange Listed Species**

Victor & Keith (2004) introduced the concept of an Orange List for plant taxa that warrant conservation measures but do not meet the IUCN criteria. These taxa include those species at risk of becoming threatened (all taxa currently considered "Near-threatened" or "Data Deficient") or representing rare or declining populations.

Boophone disticha is a "declining" geophyte that was recorded from the grassland and woodland communities. It is declining based on its medicinal properties and large quantities are being harvested and sold nationwide. Although this species is Orange listed, all populations should be managed within the footprint areas through prior marking and identification, and removed if threatened by destruction.

The dwarf succulent *Adromischus umbraticola* subsp. *ramosus* is another species of conservation concern. The taxonomic status of *A. umbraticola* subsp. *ramosus* is currently uncertain since it is easily confused with the similar *A. u.* subsp. *umbraticola*. If further research suggests that it deserves to be treated as a full species, it could justify placement in the "near-threatened" category. It was observed from rock crevices on the *Loudetia flavida – Monocymbium ceresiiforme* grassland.



#### 3.6.2.3 Protected Plant Species

Three plant species were observed and listed as protected (Table 13) under Schedule 12 of the Limpopo Environmental Management Act (No 7 of 2003) during the survey periods.

Table 13: Protected plant species recorded from the study site.

Species	Status on study site	Vegetation Unit
Aloe mutabilis (Asphodelaceae)	Localised	Open Loudetia flavida – Monocymbium
		ceresiiforme crest grassland
Eulophia bainesii (Orchidaceae)	Localised	Open Loudetia flavida – Monocymbium
		ceresiiforme crest grassland
Spirostachys africana	Widespread within	Tall Spirostachys africana – Dicliptera eenii
(Euphorbiaceae)	respective habitat	woodland along drainage lines

A permit is required to remove or disturb a protected plant. It is recommended that protected plants in danger of becoming destroyed during any of the planned activities be removed prior to the commencement of construction activities and translocated to suitable habitat, or used during the rehabilitation phase.

Three tree species (Table 14) appear on the national list of protected tree species as promulgated by the National Forests Act, 1998 (No 84 of 1998). The main reasons for this list is to provide strict protection to certain species while others require control over harvesting and utilisation.

These species occur widely throughout the contravened site and are by no means restricted in range, nor localised. In addition, these species are not threatened (not Red Data listed), but should be considered for possible future development phase of the project based on their legal status.

In terms of the National Forests Act of 1998, a licence should be granted by the Department of Forestry (or a delegated authority) prior to the removal, damage or destruction of any individual tree. Therefore, such activities (as mentioned above) should be directed to the responsible Forestry official in each province or area.

It is unavoidable that a number of trees are likely to become lost or removed during the proposed mining phase (if permission is granted). Even though they are regionally well distributed, effort should be put in place to conserve at least part of the tall canopy constituents represented by *Acacia erioloba* and *Combretum imberbe* (especially along drainage lines).



Table 14: Protected tree species recorded from the vegetation units identified on the study site.

Species	Status on study site	Vegetation Unit
Acacia erioloba	Localised	Open Acacia erioloba - Panicum maximum woodland on
(Mimosaceae) -		deep sandy soils
Camel Thorn		
Combretum	Scattered although large	Open Dichrostachys cinerea – Nidorella resedifolia
imberbe	specimens are located	shrubland
(Combretaceae) -	along drainage lines	
Leadwood		Tall <i>Spirostachys africana – Dicliptera eenii</i> woodland along
		drainage lines
		Open Acacia erioloba - Panicum maximum woodland on
		deep sandy soils
Sclerocarya birrea	Widespread, mainly on	Open Acacia caffra - Combretum molle - Diheteropogon
subsp. caffra	steep mid-slopes	amplectens woodland on steep rocky slopes
(Anacardiaceae) -		
Marula		Combretum apiculatum – Panicum maximum woodland on
		rocky soils

#### 3.6.2.4 Medicinal Plant Species

It is estimated that the Southern African subcontinent holds approximately 24 300 plant taxa (Arnold & De Wet, 1993), an estimated 10 % of the world's flora. In addition, South Africa is home to a diversity of cultural groups, all of which utilises plant species for some purpose.

A number of these species are highly prized for their traditional healing properties, especially for "muthi" (they have ethno-medicinal value). It is estimated that more than 28 million people in South Africa consume about 19 500 tonnes of plant material per annum (Mander, 1998). Although most of these plant species are regionally widespread and abundant, some are currently declining and should be envisaged as priority conservation entities. Table 15 lists those species considered to be of economical or cultural value (according to Van Wyk *et al.*, 1997; Pooley, 1998).

Table 15: A list of medicinal species observed on the study site (according to Van Wyk et al., 1997; Pooley, 1998). Important (heavily utilised) species are highlighted in grey.

Species Identified within Van Wyk et al. (1997)				
Species	Parts used	Treatment		
Acacia karroo	Bark, leaves & gum Stomach ailments such as diarrhoea and dysente			
		Bark, gum & leaves used as an astringent for colds and		
		conjunctivitis.		



Sclerocarya birrea subsp. caffra	Bark and fruit	Treatment of various ailments, including malaria. Fruit is rich in Vitamin C.	
Dicoma anomala	Leaves	Used to treat fever.	
Gomphocarpus fruticosus	Leaves	Treatment of headaches, tuberculosis and general body aches.	
Helichrysum spp.	Leaves & stems	Treatment of coughs, colds, fever, infections and menstrual pain.	
Heteropyxis natalensis	Leaves	Treatment of colds.	
Jatropha zeyheri Rhizomes		Treatment of fever and wounds.	
Terminalia sericea Roots		An infusion is made to treat pneumonia and wounds.	
Vernonia oligocephala	Leaves and twigs	Used to treat abdominal pain and colic.	
Euclea undulata	Roots	Used as a remedy for headaches and toothaches.	
Pellaea calomelanos	Leaves and rhizomes	Treatment of colds and asthma.	
Xerophyta retinervis	Stems	Used to treat asthma.	
Ziziphus mucronata	Roots, leaves and bark	Treatment of respiratory ailments.	
Species Identified within Po	ooley (1998)		
Species		Treatment	
Aloe greatheadii		Treatment of burns and wounds.	
Commelina africana		Used for a wide variety of ailments including fevers, fits, heart complaints and bladder infections.	
Dicerocaryum eriocarpum		Used as a soap substitute.	
Harpagophytum zeyheri subs	p. zeyheri	Used to treat rheumatism and arthritis	

### 3.6.2.5 Declared Weeds and Invader Plants

Declared weeds and invaders have the tendency to dominate or replace the canopy or herbaceous layer of natural ecosystems, thereby transforming the structure, composition and function of natural ecosystems.

Table 16 provides a list of declared weed and invasive plant species recorded during the current study.

Table 16: A list of weeds and invader plant species identified on the study site.

Species	Vernacular Name	Туре	Control Measure	Category
Achyranthes aspera	Burrweed	Weed	Control	1



Species	Vernacular Name	Туре	Control Measure	Category
Jacaranda mimosifolia <sup>10</sup>	Jacaranda	Invader	Control	3

It appears that the natural vegetation units on the site were relatively clear of alien and invasive plant taxa. However, minor ruderal weeds observed include species such as *Conyza canadensis*, *C. albida*, *Tagetes minuta*, *Bidens pilosa*, *Schkuhria pinnata* and *Zinnia peruviana*. These species are all annuals (they completely die off during the dry season), and are of temporary nature.

# 3.6.2.6 Richness measures and ecological condition: An indication of the conservation significance of the vegetation units

Both the *Protea caffra – Loudetia flavida* savannoid grassland and the *Acacia caffra – Combretum molle – Diheteropogon amplectens* woodland represented primary compositions. These communities, together with the forest and dolomite communities, should be considered as sensitive and should be conserved where possible.

## 3.7 Vertebrates

The following information was obtained from the report: Pachnoda. February 2014. An ecological evaluation for the Aquila Steel project. The report is available under Appendix F1.

#### 3.7.1 Mammals

A total of 72 mammal species could occur on the study site (excluding bats; discussed as a separate section) of which 40 species (55.5 %) were confirmed during the survey period. In addition, one of the observed species (the Plains Zebra *Equus quagga*) was probably introduced. Those confirmed were seven antelope species, one equid (horse), 11 rodents, one canine (jackal), two felines (cats), one hyaenid, two leporids (hares), one elephant-shrew, three herpestids (mongoose), two viverrids (genets), two mutellids, aardvark, two suids (pigs), one hyrax (dassie) and three primates.

The high mammal diversity is explained by the rural setting and the high connectivity of the area with adjacent game farms (including the Marakele National Park). Besides the locality of the study site, both the topographical complexity (mountains) and diversity of habitat types (ranging from woodland to grassland) also contributes towards the high diversity of mammal species. This diversity is further exuberated by the occurrence of a perennial tributary of the Sand River, which provides an additional niche for aquatic-dependant species (e.g. Cape Clawless Otter *Aonyx capensis* and Marsh Mongoose *Atilax paludinosus*).



<sup>&</sup>lt;sup>10</sup> J. mimosifolia was restricted to transformed areas (in particular ornamental gardens and homesteads).

Table 17: An inventory of mammalian taxa observed on study site during two independent surveys (April 2011 and November 2011).

Scientific Name	Vernacular Name	Observation Indicators	Observed Habitat
Aepyceros melampus	Impala	Visual sightings	Very common and widespread, mainly confined to the <i>Combretum apiculatum</i> – <i>Dichrostachys cinerea</i> – <i>Panicum maximum</i> woodland on low-lying areas.
Aethomys ineptus	Tete Veld Rat	Trapped	Very common and widespread.
Aonyx capensis	Cape Clawless Otter	Droppings	Recorded along the tributary of the Sand River.
Atilax paludinosus	Marsh Mongoose	Spoor	Recorded along the tributary of the Sand River.
Canis mesomelas	Black-backed Jackal	Spoor & vocalisations	Widespread – more abundant on the low-lying areas.
Caracal	Caracal	Spoor	Confined to rocky secluded areas.
Cercopithecus pygerythrus	Vervet Monkey	Visual sightings	Widespread, prevalent along the drainage lines and Spirostachys africana – Dicliptera eenii woodland.
Cryptomys hottentotus	African Mole-rat	Soil heaps	Widespread
Elephantulus myurus	Eastern Rock Sengi	Visual Sightings	Confined to the dolomite outcrops.
Equus quagga	Plains Zebra	Visual sightings	Introduced
Galago moholi	Southern Lesser Galogo	Visual sightings	Widespread, prefers wooded areas.
Galerella sanguinea	Slender Mongoose	Visual sightings.	Widespread
Genetta maculata	Large-spotted Genet	Camera trapped	Widespread
Hystrix africaeaustralis	Cape Porcupine	Quills & diggings	Widespread, all habitat types.
Lepus saxatilis	Shrub Hare	Droppings & Visual sightings	Widespread, mainly on flat topographies.
Mastomys	Multimammate	Trapped	Mainly confined to secondary
coucha/natalensis	Mouse		woodland ( <i>Dichrostachys cinerea</i> – <i>Nidorella resedifolia</i> shrubland).
Mellivora capensis	Honey Badger	Spoor	Mainly confined to low-lying areas.
Micaelamys	Namaqua Rock	Trapped	Widespread on rocky areas.
namaquensis	Mouse		
Mungos mungo	Banded Mongoose	Visual sightings	Widespread, confined to the Combretum apiculatum –



Scientific Name	Vernacular Name	Observation Indicators	Observed Habitat
			Dichrostachys cinerea – Panicum maximum woodland.
Mystromys albicaudatus	White-tailed Rat	Trapped	Status uncertain, one individual caught from rocky woodland (Combretum apiculatum – Dichrostachys cinerea – Panicum maximum woodland).
Oreotragus transvaalensis	Transvaal Klipspringer	Visual sightings	Restricted to outcrops within the <i>Protea</i> caffra – Loudetia flavida savannoid grassland.
Orycteropus afer	Aardvark	Burrows & spoor.	Confined to low-lying areas on sandy substrate.
Panthera pardus	Leopard	Camera trapped & spoor.	Widespread.
Papio cyanocephalus ursinus	Savanna Baboon	Droppings & visual sightings	Widespread, all habitat units
Parahyaena brunnea	Brown Hyaena	Spoor	Widespread – recorded from the low- lying areas and Acacia caffra – Combretum molle – Diheteropogon amplectens woodland.
Paraxerus cepapi	Tree Squirrel	Visual sightings	Widespread.
Pedetes capensis	Springhare	Visual sightings	Widespread from low-lying areas on sandy substrate.
Phacochoerus africanus	Common Warthog	Visual sightings & spoor	Widespread, mainly confined to the low-lying areas.
Potamochoerus Iarvatus	Bushpig	Spoor & diggings	Restricted to areas with dense cover (Spirostachys africana – Dicliptera eenii woodland).
Procavia capensis	Rock Hyrax	Visual sightings.	Common on rock outcrops and cliffs.
Pronolagus randensis	Jameson's Red Rock Rabbit	Droppings	Common from exposed outcrops, especially the <i>Protea caffra – Loudetia flavida</i> savannoid grassland
Raphicerus campestris	Steenbok	Visual sightings & spoor.	Widespread on low-lying areas.
Redunca fulvorufula	Southern Mountain Reedbuck	Visual sightings	Confined to the steep slopes of the Protea caffra – Loudetia flavida savannoid grassland.



Scientific Name	Vernacular Name	Observation Indicators	Observed Habitat
Rhabdomys pumilio	Four-striped Grass Mouse	Trapped	Mainly confined to secondary woodland ( <i>Dichrostachys cinerea</i> –
			Nidorella resedifolia shrubland).
Strepsiceros	Zambezi Kudu	Visual sightings,	Very common and widespread.
zambesiensis		spoor & droppings	
Sylvicapra grimmia	Common Duiker	Spoor, droppings & visual sightings	Widespread, all areas – abundant.
Tatera leucogaster	Bushveld Gerbill	Burrows	Widespread on sandy substrate.
Thallomys paedulcus	Acacia Rat	Visual sightings.	Confined to Acacia woodland.
Tragelaphus sylvaticus	Bushbuck	Visual sightings.	Widespread, prevalent along the drainage lines and Spirostachys africana – Dicliptera eenii woodland.

#### 3.7.1.1 Mammal taxa of conservation concern

The study area provides habitat for a variety of threatened and near-threatened taxa, of which four species were confirmed during the surveys. Based on the large variety of habitat types available, the study site is likely to sustain one globally threatened and two globally near-threatened species (according to the IUCN, 2011), as well as four regionally threatened and near-threatened species (according to Friedmann & Daly, 2004).

A brief annotated account is provided below for those species *confirmed* on the study site:

#### Brown Hyaena (Parahyaena brunnea)

The Brown Hyaena is listed as "near-threatened" on the global *IUCN Red List* (Wiesel *et al.*, 2008) since it requires extensive areas (sometimes in excess of 1000 km²) to maintain a viable population, especially where inter-specific competition for resources is fierce between other predator taxa. Such massive home ranges often coincide with livestock and agricultural areas where they are heavily persecuted by farmers. Therefore, persecution and the loss of habitat due to agricultural intensification are some of the primary threats for the persistence of this species.

The numerical abundance of this species on the study area remains unclear, although observations show that it is *widespread in the area*. It was recorded from numerous localities (based on spoor tracking) on the low-lying plains and steep rocky slopes. The high density of tracks (spoor) on the study site shows that this species is probably sedentary on the site as it coincides with the territory of at least one family group (representing a female and her offspring) that is defended by one or two males.



#### Leopard (Panthera pardus)

The Leopard, although a widespread and adaptable species, is listed as "near-threatened" on the global *IUCN Red List* (Henschel *et al.*, 2008). The global population estimates of *P. pardus* are non-existent or very unreliable, which is responsible for its placement in the "near-threatened" category. Furthermore, increased competition for space together with frequent human encounters (near farming communities) has seriously reduced the number of global subpopulations.

The presence of ridges and rocky promontories (shelter), dense vegetation (shelter) and a generous availability of prey (it is catholic in its diet, taking prey as small as invertebrates to large antelopes, including Kudu) prompted the definite occurrence of this species on the study site. It was *confirmed* on the site, with a least a family group consisting of a female and her offspring present (the drill operators confirmed sightings of a female with a cub).

#### White-tailed Rat (Mystromys albicaudatus)

The White-tailed Rat is listed as "endangered" on the global *IUCN Red List* (Coetzee & Monadjem, 2008), since its preferred habitat is rapidly declining as a result of grazing and agricultural practices. An estimated 50-80 % of suitable habitat is already lost during the past 40 years. It is assumed that further losses will incur if agricultural practices continue to expand at the current rate. The global population size of this species remains unknown, but it is assumed to be low according to capture rates (Coetzee & Monadjem, 2008).

The White-tailed Rat is essentially a terrestrial species of "climax" and "sub-climax" grassland on black loamy soils with good cover. Lynch (1994) and Taylor (1998) also mentioned that this species favours rocky areas along rivers or wetlands with a sparse vegetation cover. However, it was *confirmed* from the primary grassy layer of the *Acacia caffra — Combretum molle — Diheteropogon amplectens* woodland. It also highlights the strong association of *M. albicaudatus* with primary grassland on rocky substrate. It is the first time that this species has ever been recorded in the Thabazimbi area (or even in the Waterberg district) according to published records (see Skinner & Chimimba, 2005).

#### Honey Badger (Mellivora capensis)

The Honey Badger is listed as "least concern" on the global *IUCN Red List* although Friedmann and Daly (2004) have listed it as "near-threatened".

Honey Badgers are widespread and generally very catholic in their habitat requirements. They are predominately nocturnal, solitary, and generally very unobtrusive in behaviour (Skinner & Chimimba, 2005). This species was *confirmed* on the study site (based on spoor), and anecdotal observations in the region (e.g. the Rooiberg area) suggest that it is widespread and abundant in the area. It is tolerant to modified habitat types and recent observations from the central Mpumalanga Highveld have shown that it can persist on areas dominated by agricultural activities (camera trapping, pers. obs.). Its



presence emphasises the reality that this species, due to its unobtrusiveness, can occur almost anywhere.

It is worth mentioning that the "near-threatened" Spotted Hyaena (*Crocuta crocuta*) (Friedmann & Daly, 2004) has been confirmed from the nearby Rooiberg road (approx. 6-7 km south of the study site) during a faunal investigation conducted in 2006. The close proximity of these observations highlights the probability that *C. crocuta* could occur on the study site (e.g. during foraging bouts).

#### 3.7.1.2 Biodiversity value and ecological considerations

- The geographic position of the study site (among a number of game farms) is responsible for a
  high diversity of mammal taxa, which include species pertaining to higher trophic guilds (e.g.
  Leopard). The study site provides a dependable refuge and abundant prey base for meso- (e.g.
  jackal, badgers) as well as meta-carnivores (e.g. leopard) which are nowadays rare outside large
  game management areas;
- The high intactness of the vegetation units, in combination with the topographical complexity and the "sense of wilderness" of the area, are responsible for the occurrence of two globally "near-threatened" scavenger/predator species, namely Leopard (*Panthera pardus*) and Brown Hyaena (*Parahyaena brunnea*);
- The primary composition of the graminoid layer is responsible for the "discovery" of the "endangered" White-tailed Rat (*Mystromys albicaudatus*); and
- The tributary of the Sand River and various non-perennial drainage lines are important functional entities since they facilitate dispersal of mammal taxa. The presence of surface water and hydrophytic vegetation (e.g. *Phragmites mauritianus* & *Typha capensis*) along the Sand River has made it possible for wetland-dependent taxa to colonise the area (e.g. Marsh Mongoose *Atilax paludinosus* and the Cape Clawless Otter *Aonyx capensis*).

#### 3.7.2 Avifauna

#### 3.7.2.1 Species richness and composition

According to the South African Bird Atlas Project (SABAP1: Harrison *et al.*, 1997), 165 bird species have been recorded from the quarter degree grid (2427DA) that overlaps with the study site. This equates to 17 % of the approximate 951 species listed for the southern African subregion<sup>11</sup>. In addition, the SABAP2 database recorded an average of 69 species (<a href="www.sabap2.adu.org.za">www.sabap2.adu.org.za</a>) in the area, which is even lower than the SABAP1 database. The SABAP2 statistic was obtained from four pentad grids representing eight independent observations<sup>12</sup>. The current survey produced 187 species despite the poor richness documented during the two atlas periods, which is also 23 species more than the SABAP1



<sup>&</sup>lt;sup>11</sup> A geographical area south of the Cunene and Zambezi Rivers (includes Namibia, Botswana, Zimbabwe, southern Mozambique, South Africa, Swaziland and Lesotho).

<sup>&</sup>lt;sup>12</sup> Totals range between seven and 66 species listed during an independent observation.

total (Table 18). The atlas data clearly illustrates the lack of interest in the area by citizen scientists. On a national scale, the species richness on the study area is considered low-moderate.

Table 18: A summary table of the total number of species (based on SABAP1), Red listed species (according to Barnes, 2000 and the IUCN, 2011), endemics and biome-restricted species (Barnes, 1998) expected and observed on the study site. Values in brackets refer to derived totals compared against the southern African subregion (expected) and the SABAP1 (and SABAP2) database (observed).

	Expected	Observed
Total number of species	165 (17 %)	187 (113 %)
Number of Red listed species (Barnes, 2000 & IUCN, 2011)	11 (8.5 %)	2 (18 %)
Number of biome-restricted species (Barnes, 1998 – Kalahari Highveld & Zambezian)	8 (11 %)	4 (50 %)
Number of endemics (Hockey et al., 2005)	11 (11 %)	8 (72 %)
Number of near-endemics (Hockey <i>et al.</i> , 2005)	15 (24 %)	9 (60 %)

The observed totals are well within the limit (> 50 %) of the number of species likely to occur, and provide a realistic indication of the thoroughness and general coverage of the study site. The area was poorly represented by biome-restricted<sup>13</sup> (see Table 19) and endemic bird species. Despite the poor richness of endemic species, the area accommodates a number of species with highly localised distribution patterns in the region (e.g. out of range distributions). These species are primarily restricted to dense environments and are confined to the Afromontane forests and *Spirostachys africana* – *Dicliptera eenii* woodland (e.g. Terrestrial Brownbul *Phyllastrephus terrestris*, Narina Trogon *Apaloderma narina* and Collared Sunbird *Hedydipna collaris*).

Table 19: Biome-restricted species (Barnes, 1998) observed on the study site.

Species	Afrotropical Highlands	Zambezian
Buff-streaked Chat	X	
White-bellied Sunbird		X
White-throated Robin-chat		X
Kurrichane Thrush		X

<sup>&</sup>lt;sup>13</sup> A species with a breeding distribution confined to one biome. Many biome-restricted species are also endemic to southern Africa.



An analysis of bird data generated from the point counts showed that the Dark-capped Bulbul (*Pycnonotus tricolor*), Cape White-eye (*Zosterops virens*), Chin-spot Batis (*Batis molitor*) and Greybacked Camaroptera (*Camaroptera brachycaudata*) are dominant in the area (Table 20 summarises the 10 typical species observed on the study site). These species are widespread and consists of (1) granivorous taxa (canaries & buntings) and (2) insectivorous species that co-occur in nutrient-poor systems pertaining to broad-leaved woodland.

Table 20: The dominant bird species recorded on the study site.

Species	Average Abundance	Consistency	% Contribution
Dark-capped Bulbul	1.06	0.77	41.92
Cape White-eye	0.58	0.3	7.57
Chin-spot Batis	0.48	0.26	6.74
Grey-backed Camaroptera	0.27	0.24	4.07
Lazy Cisticola	0.39	0.16	3
Black-backed Puffback	0.3	0.17	2.74
Yellow-fronted Canary	0.58	0.16	2.62
Streaky-headed Seed-eater	0.39	0.16	2.49
Cape Bunting	0.24	0.14	2.21
Rattling Cisticola	0.36	0.13	2.12

The study site is represented by two distinct avifaunal communities:

- A community associated with high-altitude *Protea* grasslands. Determinant species include the Cape Bunting (*Emberiza capensis*), Wailing Cisticola (*Cisticola lais*), Malachite Sunbird (*Nectarinia famosa*) and Buff-streaked Chat (*Oenanthe bifasciata*); and
- A community restricted to "bushveld" vegetation (irrespective of structure and composition). This community is segregated into two prominent assemblages: (1) an assemblage occurring in tall woodland and forest (Dark-capped Bulbul *Pycnonotus tricolor*, Cape White-eye *Zosterops virens*, Grey-backed *Camaroptera brachycaudata* and Black-backed Puffback *Dryoscopus cubla*) and (2) an assemblage frequenting mixed broad-leaved woodland and mountain bushveld (Lazy Cisticola *aberrans*, Chin-spot Batis *molitor*, Rattling Cisticola *C. chiniana* and Cinnamon-breasted Bunting *Emberiza tahapisi*).

#### 3.7.2.2 Red listed, "near-threatened" and "data deficient" species

Table 21 provides an overview of bird species of "special conservation concern" recorded on the study area, as well as those previously recorded in the area based on their known distribution range and the presence of suitable habitat. According to Table 21, 11 species could occur on the study site, of which



only two were confirmed during the survey period. The confirmed species include a globally threatened species and a regionally near-threatened species.

Table 21: Bird species of "special conservation concern" that could utilise the study site based on their known distribution range and the presence of suitable habitat. Species highlighted in grey were confirmed on the study site. Red list categories according to the IUCN (2011)\* and Barnes (2000)\*\*.

Species	Global Conservation Status*	National Conservation Status**	Recorded during SABAP1	Recorded during SABAP2	Preferred Habitat	Potential Likelihood of Occurrence
Alcedo semitorquata (Half-collared Kingfisher)	-	Near- threatened	No	No	Prefers fast- flowing and well- vegetated streams.	High, the tributary of the Sand River provides suitable habitat.
Aquila rapax (Tawny Eagle)	-	Vulnerable	No	No	Lowveld and Kalahari savanna, especially game farming areas and reserves.	Regarded as an irregular foraging visitor on the study site.
Aquila verreauxii (Verreaux's' Eagle)	-	Vulnerable	Yes	Yes	Mountainous areas or areas with prominant outcrops with a high prey base (e.g. hyrax)	Confirmed.
Buphagus erythrorhynchus (Redbilled Oxpecker)		Near- threatened	No	No	Restricted to game and rural livestock farming areas within the savanna region.	Confirmed. The dead trees near the old homestead and on the Acacia erioloba – P. maximum woodland provides



Species	Global Conservation Status*	National Conservation Status**	Recorded during SABAP1	Recorded during SABAP2	Preferred Habitat	Potential Likelihood of Occurrence
						optimal breeding habitat.
Ciconia nigra (Black Stork)		Near- threatened	No	Yes	Breeds on steep cliffs within mountain ranges; forages on ephemeral wetlands.	An irregular foraging visitor on the study site. The nearby Marakele National Park sustains a small breeding population.
Coracias garrulous (European Roller)	Near- threatened	-	No	No	Open woodland and bushveld.	A fairly common non-breeding (summer) visitor. It is not threatened in South Africa.
Falco biarmicus (Lanner Falcon)	-	Near- threatened	No	No	Varied, but prefers to breed in mountainous areas.	Probably resident. It could have been overlooked since the study site provides excellent breeding habitat (cliffs)
Gyps africanus (White-backed Vulture)	Near- threatened	Vulnerable	No	No	Breeds on tall, flat-topped trees. Mainly restricted to large rural or	An irregular (non-breeding) foraging visitor on the study site.



Species	Global Conservation Status*	National Conservation Status**	Recorded during SABAP1	Recorded during SABAP2	Preferred Habitat	Potential Likelihood of Occurrence
					game farming areas.	
Gyps coprotheres (Cape Vulture)	Vulnerable	Vulnerable	Yes	Yes	Varied but breeds on steep south or east facing cliffs.	A regular foraging visitor to the study site (regularly observed soaring overhead) from the nearby (10 km north) breeding colony at Kransberg. The study site is not suitable for breeding.
Polemaetus bellicosus (Martial Eagle)	Near- threatened	Vulnerable	No	No	Varied, from open karroid shrub to lowland savanna.	An irregular foraging visitor on the study area.
Terathopius ecaudatus (Bateleur)	Near- threatened	Vulnerable	No	No	Lowveld and Kalahari savanna; mainly on game farms and reserves	Vagrant.
Torgos tracheliotus (Lappetfaced Vulture)	Vulnerable	Vulnerable	No	No	Restricted to large game farming districts. More inclined towards the Lowveld and Kalahari Thornveld.	Vagrant.

Those species with a high probability of occurrence are discussed below:

#### Lanner Falcon (Falco biarmicus)

*F. biarmicus* is currently classified as regionally "near-threatened" (Barnes, 2000). *F. biarmicus* breeds mainly in mountainous areas and prefers deep ravines and sheer cliffs for nesting purposes. Although fairly common within its distribution range with approximately 1 400 pairs in the eastern part of South Africa (Tarboton & Allen, 1984), it is at risk due to persisting loss of open habitat to make way for agricultural land.

It was not observed during the survey period although believed to be fairly common in the area. The vertical cliffs and outcrops (as part of the *Loudetia flavida – Monocymbium ceresiiforme* crest grassland) provide optimal breeding and roosting habitat for this species which is considered to be a common resident in the area.

#### Redbilled Oxpecker (Buphagus erythrorhynchus)

*B. erythrorhynchus* is currently classified as regionally "near-threatened" (Barnes, 2000). It is a widespread and common breeding resident on the study site. However, its distribution appears to be limited by the availability of suitable breeding and roosting habitat that include large dead trees. Important breeding habitat was noted from the *Acacia erioloba – Panicum maximum* woodland and a small area of *Acacia* woodland adjacent to the old homestead. Management principles should include the preservation of large dead trees if this species is to persist on the study site.

#### Half-collared Kingfisher (Alcedo semitorquata)

A. semitorquata is classified as regionally "near-threatened" (Barnes, 2000). It is a widespread species with a preference for clear, fast-flowing perennial streams consisting of alternating riffle water and slower sections of deeper pools. Apart from the above, dense marginal vegetation (e.g. overhanging vegetation) bordering streams is a prerequisite.

It could occur along the tributary of the Sand River based on the occurrence of suitable habitat. Although elusive by habit, it is predicted that the study area could support at least one breeding pair of this species.

#### Cape Vulture (Gyps coprotheres)

The following report was obtained from: Benson, P.C. June 2014. An assessment of the potential conflict and impacts between mining activities at the Meletse Iron Ore Project and Cape Vulture *Gyps coprotheres* at the Kransberg colony, Limpopo Province, South Africa. The report is available under Appendix F15.

The Cape Vulture, a southern African endemic, is classified *vulnerable* on the *Red List* of the International Union for the Conservation of Nature (IUCN). One of eight old world species of the genus *Gyps*, Cape Vultures nest colonially on cliffs and are specialist feeders of soft tissues (i.e. muscle,



internal organs) of ungulates. *Gyps* vultures evolved with the large migratory ungulate herds (e.g. wildebeest, springbok, black buck, etc.), which once roamed over Europe, Asia and Africa (Houston 1983). With the disappearance of these herds, in southern Africa, Cape Vulture numbers declined (Boshoff & Vernon 1980), and have become dependent on domestic livestock, particularly in communal grazing areas. The largest colonies of Cape Vultures are near these communal areas (e.g. the former South African homelands – Vernon *et al.* 1983, Vernon 1999, Benson *et al.* 1990), where elevated stocking rates and poor veldt conditions result in high livestock mortality rates (Huntley *et al.* 1986). South Africa's former Transvaal Province, and the present Limpopo Province, particularly, is the main stronghold of this bird (Benson & Dobbs 1983, Tarboton & Allan 1984, Benson *et al.* 1990, Benson 1997, 2004). *Gyps* vultures are vulnerable to a wide range of factors, including poisoning, electrocutions and collisions with utility lines, drowning in farm dams, shooting, and habitat destruction (Marcus 1972, Anderson & Taljaard 1994, Benson 2000, Oaks *et al.* 2004).

The Kransberg Cape Vulture colony is located 20 km northeast of the town of Thabazimbi, in Limpopo Province (*Figure 36*, *Figure 37*). The colony is on the southern exposure of the western end of the Waterberg Mountain Range on the farm Groothoek (24º 29' 04.2" S/27º 36 58.4 E). The nesting area is 5.1 km long on a 200 metre high cliff with the majority of the breeding activities occurring on the western sections. Much of the western portion of the colony is found within South African National Parks (SANParks) Marakele National Park. The eastern portion of the colony is on private farms with some sections belonging to SANParks.



Figure 36- Kransberg Cape Vulture colony - PC Benson © 2014

A long-term project of monitoring of breeding and other activities of Cape Vultures at the Kransberg colony began in 1981 and continues to date. The main focus of this research has been the reproductive activities of the birds and causes of their mortality (*Figure 38*). Other aspects have been considered,



including nutrition, inter and intra-specific interactions and foraging behaviour (Benson & Dobbs 1983, Dobbs & Benson 1983a, 1983b, Benson *et al.* 1990, Benson 2004, Benson *et al.* 2004).

Cape Vultures breed along the 5.1 km section of the south facing cliff (*Figure 37*). They are winter breeders, the majority of eggs being laid between mid-April and mid-June. Nestlings mainly fledge from mid-October to mid-January. Birds have bred between the locations KBERG-EE to KBERG-W-end in the last 33 years (*Figure 37*). Several nesting attempts have occurred on cliffs to the north of the main breeding colony, within the Marakele National Park, further from the Meletse Iron Ore Project site, but these sites have been few in number and none have been used since 2003. They are not considered in this assessment. The proposed iron ore mine, Meletse Iron Ore Project, is located approximately 12 km south of the Kransberg colony on the farm Donkerpoort, in the Meletse Mountain Range (*Figure 39*). On the main breeding cliff, nesting has mainly occurred between KBERG-DL and KBERG-Swift (Figure 2). That is the present situation (2014-2015 breeding season). The distances of these nesting areas from the Meletse Iron Ore Project site are: KBERG-W-end (13.7 km), KBERG-DL (13.3 km), KBERG-Swift (12.1 km) and KBERG-EE (11.6 km).

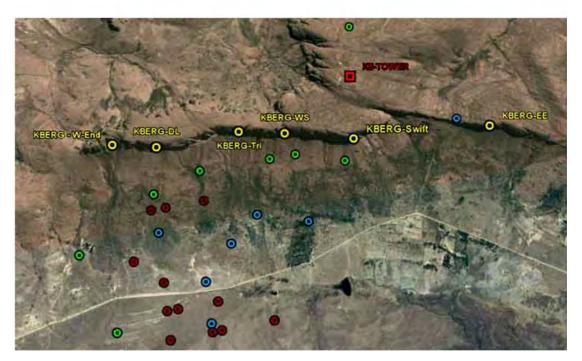


Figure 37– Kransberg Cape Vulture colony – Google Earth view – yellow circles – extent of the colony and particular sites therein: the distance between KBERG-W-End and KBERG-EE is approximately 5.1 km. The red, blue and green circles are locations of radio-marked Cape Vultures (see below).

# The total number of breeding attempts at the Kransberg Cape Vulture colony - 1983-2013 (n=24,429)

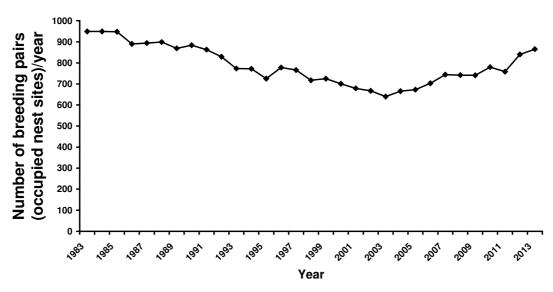


Figure 38– Total numbers of breeding attempts and breeding pairs/year (occupied sites – see Postupalsky 1976) at the Kransberg Cape Vulture colony 1983 – 2013. PC Benson © 2014



Figure 39— View from the Kransberg Cape Vulture colony of the north side of the Meletse Iron Ore Project proposed mine site. Mining will occur on the opposite side of this mountain.

Foraging areas of the Kransberg Cape Vultures and the Meletse Iron Ore Project – habitat loss
Though most of the Kransberg Cape Vultures nest within Marakele National Park, very little of the vultures' foraging occurs there. Figure 40 shows foraging movements of three breeding adult Cape



Vultures which were fitted with radio transmitters. Most of the movements of these birds are concentrated from southwest to northwest of the colony. The main foraging areas are in the former South African homeland of Bophuthatswana, extending into Botswana. These are mainly communal areas, where domestic livestock grazing is the predominant land-use. Benson *et al.* 2004 found that the Kransberg Cape Vultures fed mainly on domestic livestock, particularly cows *Bos taurus*.

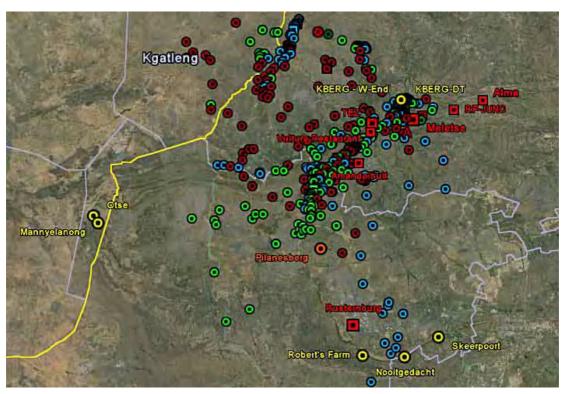


Figure 40 – Movements of three radio-marked breeding adult Cape Vultures from the Kransberg colony during foraging activities (dark red, green blue circles). Cape Vulture colonies (yellow circles), Pilanesberg National Park (orange circle), mine, towns, police training centre and vulture restaurant (light red squares).

A few locations of the marked birds are east of the Meletse site, but the vast majority (> 98%), are west of the proposed mine. Two factors account for this pattern, topography and carrion location. *Gyps* vultures are dependent on thermals to efficiently fly (Pennycuick 1971, 1972) and these mainly develop over flat areas, as occur west of the Kransberg colony, rather than in the mountainous areas to the east. High livestock mortality in communal grazing areas (Huntley *et al.* 1986), results in an abundance of carrion, which *Gyps* vultures are dependent on. Communal grazing areas are found west of the colony, in the former homeland of Bophuthatswana and Botswana. Birds do fly east of the colony, but this occurs mainly in the afternoons once they have returned from foraging flights (PCB pers. obs.). *Figure 41* shows the two locations closest to the Meletse site, as determined by radio-telemetry. Location A is 4.13 km from the Meletse site and location B is 4.87 km away. It is likely that Cape Vultures fly closer to the Meletse site, but the radio-telemetry findings suggest this is not a common occurrence.



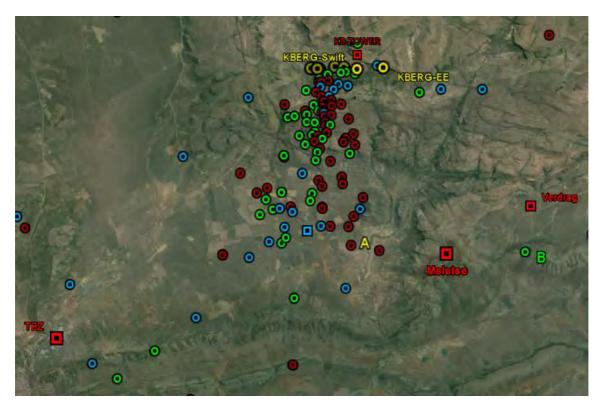


Figure 41– The closest locations to the proposed Meletse Iron Ore Project documented for radiomarked Cape Vultures. Location A is 4.13 km from the Meletse site and location B is 4.87 km away.

Though a number of wild ungulate species exist on the Meletse site (Pachnoda Consulting 2012, PCB pers. obs.), most will not be readily available to foraging Cape Vultures. Over a third (34.6%) of the entire Donkerpoort Farm (2141 ha) is covered with dense woodland (Pachnoda Consulting 2012). *Gyps* vultures avoid denser vegetation when foraging, because their heavy wing-loading makes it difficult to get into and out of such areas (Bamford *et al.* 2009). This would preclude the vultures from feeding in most of the lower reaches of Donkerpoort Farm, where the bush is denser. The higher more open areas on the Meletse mountain, are more suitable for foraging birds, however few ungulates occur there (e.g. southern mountain reedbuck *Redunca fulvorufula*, Transvaal Klipspringer *Oreotragus transvaalensis* - Pachnoda Consulting 2014, PCB pers. obs.). At best, the proposed Meletse mine site is marginal foraging habitat for Cape Vultures.

# 3.7.2.3 Biodiversity value and ecological considerations

The study site represents five areas of avifaunal importance:

- The Sand River tributary provides ideal habitat for the "near-threatened" Half-collared Kingfisher (Alcedo semitorquata) and is a critical important daily flight/dispersal route for waterbird taxa (e.g. cormorants, African Black Duck Anas sparsa, certain stork species and Hamerkop Scopus umbretta) the Sand River tributary forms a vital corridor with other foraging habitat (impoundments) and roosting sites in a region where surface water is naturally scarce;
- The Loudetia flavida Monocymbium ceresiiforme crest grassland and Protea savanna sustain a relict grassland community with affinities to the Drakensberg Highlands (e.g. Buff-streaked Chat



*Oenanthe bifasciata,* Cape Canary *Serinus canicollis*). In addition, the presence of *P. roupelliae* highlights the possibility for the occurrence of an isolated population of Gurney's Sugarbirds (*Promerops gurneyi*) – a small population exists on the nearby Marakele National Park;

- The *Mimusops zeyheri Calodendron capense* Afromontane forest and tall woodland along the various drainage lines support a bird composition of local interest that is commonly associated with forested habitat types (e.g. Narina Trogon *Apaloderma narina*, African Goshawk *Accipiter tachiro* and Terrestrial Brownbul *Phyllastrephus terrestris*);
- The ridges and vertical cliffs (part of the *Loudetia flavida Monocymbium ceresiiforme* crest grassland) are the ideal nesting platform for Falconiiform taxa (e.g. Lanner Falcon) and foraging habitat for charismatic birds of prey species (Verreaux's Eagle *Aquila verreauxii*);
- The large dead trees pertaining to the *Acacia erioloba Panicum maximum* woodland provide roosting and breeding habitat for cavity nesters including the Red-billed Oxpecker (*Buphagus erythrorhynchus*); and
- The presence of free-roaming game (especially Zambezi Kudu *Strepsiceros zambesiensis* and Impala *Aepyceros melampus*) is responsible for the establishment of a local population of "nearthreatened" Red-billed Oxpeckers (*Buphagus erythrorhynchus*).

#### 3.7.3 Bats

The following information was obtained from the report: Seamark, E.C.J. & Kearney, T.C. June 2014. Meletse Iron Ore Project: Assessment of the possible threats by mining operations to bat foraging areas, and possible mitigation measures. The full specialist report is attached under Appendix F5.

## 3.7.3.1. Study Area

The study was conducted on the Farm Randstephne 455 KQ, remaining extent, and Donkerpoort 448 KQ, remaining extent.

The vegetation within the study area is defined as the Western Sandy Bushveld vegetation type, which varies from tall open to low woodlands, and broad-leaved as well as microphylous tree species are prominent (Mucina & Rutherford 2006).

Figure 42 shows the placement of detectors and capture sites in the study area, while *Table 22* gives the precise coordinate information for these various sites. Sites were selected within and outside the proposed mining rights area, as well as at different distances from the Gatkop Cave entrance.



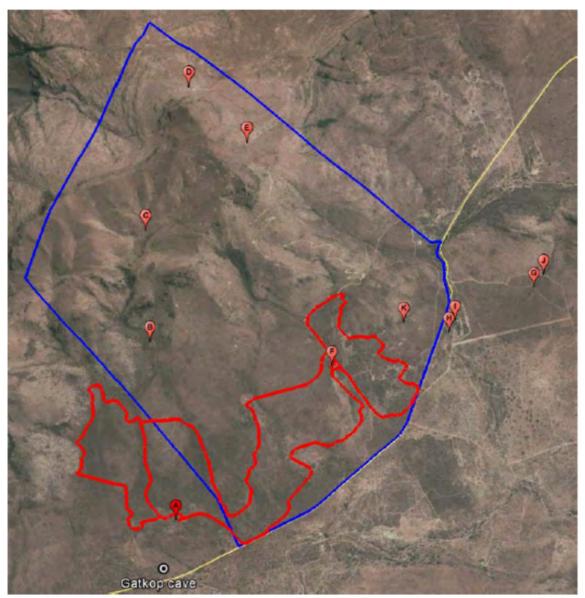


Figure 42: Map indicating the entrance to Gatkop Cave and the position of different, static bat detector stations (A-E), capture sites (A, B, F-K), the driven transect route (red line), and the mining area (blue line). Further information about the point localities is provided in Table 22.

Table 22: Details for the point localities of the capture sites (N) and static bat detector stations (S) plotted in Figure 42.

Site	Longitude	Latitude	Detection method
Α	24.61324°S	27.65380°E	S, N
В	24.59500°S	27.65117°E	S, N
C	24.58399°S	27.65104°E	S
D	24.57045°S	27.65591°E	S
E	24.57557'S	27.60203°E	S
F1	24.59751°S	27.67145°E	N
G <sup>1</sup>	24.58943°S	27.69429°E	N
H <sup>1</sup>	24.5941°S	27.68473°E	N
1	24.59277°S	27.68548°E	N
J	24.58812°S	27.69532°E	N
K	24.59306°S	27.67956°E	N



## 3.7.3.2 Free-Flying Capture

While eight bat species have been recorded at the entrance of Gatkop Cave, 11 species were caught in mist-nets and harp traps at sites varying distances away from the cave (Murcott 2013; E. Seamark unpublished information). Five of these species have been recorded from Gatkop Cave: *M. natalensis*, *M. tricolor*, *R. blasii*, *R. smithersi*, and *R. simulator*. Of the other six species: Mauritian Tomb Bat (*Taphozous mauritianus*), Cape Serotine Bat(*Neoromicia capensis*), Zulu Serotine (*Neoromicia zuluensis*), Rusty Bat (*Pipistrellus rusticus*), Yellow House Bat (*Scotophilus dinganii*), and Egyptian Free-tailed Bat (*Tadarida aegyptiaca*), with the exception of *T. aegyptiaca*, they are not known to be cave roosting.

Mistnets and harp traps have their limitations in that they may not catch species that are flying above the height the nets are set, and some species appear better able to detect and avoid these forms of capture. However, bearing these limitations in mind, capture rates across the sites and for the different months of capture, as well as the species caught are indicated in *Table 23*. Capture rates vary considerably across the sites and the different sample periods. Larger capture rates in December and January, relative to March, are the result of the presence in December and January of the large population of *M. natalensis* that utilizes Gatkop Cave as a maternity and nursery roost, but then leave toward the end of February for their winter roosts on the Highveld. Capture rates were highest at sites A, F and H. Numerous species appeared to be drawn to the open water sources at sites A and F, whereas site H, on a narrow, dirt road running close to the Sand River, appeared to be an important flight route for *M. natalensis*.

From the species caught at the different capture sites it appears many are widely distributed across the area sampled. The exceptions to this, in addition to the species recorded at Gatkop Cave that were not caught free flying at any of these sites, were *R. blasii* and *R. smithersi* that were only caught at the site closest to Gatkop Cave, and *T. aegyptiaca* that was only caught at site G. However, the echolocation data presented in the following sections indicates these species occur at sites further afield than where they were caught, and were possibly overlooked at some sites by this sampling method.

However, in the absence of data recording the actual movements of individuals of the different species, it is not always possible to identify whether a relatively widely recorded distribution is the result of individuals of a species being wide ranging, or if they have limited home ranges, with more individuals and roosts scattered across the landscape. A single, male *R. simulator* found roosting under thatch at site I, suggests yet another scenario that while the majority of the *R. simulator* individuals in the Meletse area might be roosting in Gatkop Cave (both males and females have been recorded at the cave), other individuals are scattered across the landscape, wherever they can find suitable roosts.



Table 23: Capture rates for mist nets used at eight sites, at different sample period, and species caught at each of the sites, including those harp trapped. Species abbreviations: Miniopterus natalensis = Mn, Myotis tricolor = Mt, Neoromicia capensis = Nc, Neoromicia zuluensis = Nz, Pipistrellus rusticus = Pr, Rhinolophus blasii = Rb, Rhinolophus simulator = Rs, Rhinolophus smithersi = Rsm, Scotophilus dinganii = Sd, Tadarida aegyptiaca = Ta, and Taphozous mauritianus = Tm).

Site	Α	В	F	G	Н	1	J	K
Dec12		0.4 2 Nz	48.10 Mn,Mt,Nc,Sd	19.80 Nc,Nz,Sd,T a	42.70 Pr,Mn	4.63 Nc, Rs,Sd,T m		
Jan13			100.00 Mn,Nc,Pr,Sd,R s	3.40 Mn,Rs	163.0 0 Mn		0 non e	3.15 Mn,Nc,Nz,S d
Mar13	6.94 Nz,Sd		11.60 Mn,Nc,Nz	1.80 Nc	3.7 Pr			
Sept1	3.11 Mn,Mt,Nz,Rs							
Oct13	0.48 Rs							
Nov13	1.57 Rb,Rs,Rsm,T m							
Dec13	63.66 Mn,Rb,Rs	1.7 4 Nz						

#### 3.7.3.3 Driven Transect

Figure 43 shows that while bats are widespread across the landscape, there are areas with greater concentrations of calls, as well as those where no calls have been recorded during the transect drives. The westerly area between the cave and the Meletse mountain has the highest concentration of bat calls along the transect route. A caveat about the density of calls along the road leading almost in line away from the cave area up toward the mountain is that this part of the route is sampled twice during a drive. Areas without bat calls are dispersed across transect to the east of this area of higher concentration, however, the longest continuous stretch without calls is along the lower section of the well-defined road on the boundary of Donkerpoort 448 KQ with Randstephne 455 KQ. With the exception of the most easterly road running to/from from the mountain, the area to the east of Gatkop Cave has a lower concentration of calls. Areas of increased bat activity appear to overlay areas of increased density of woody vegetation, and run at right angles to the mountain, rather than parallel to it. Ninety percent of the points recorded during the driven transect (Figure 43) were attributable to M. natalensis.





Figure 43: Plot of recordings from monthly transects driven nine times between December 2013 and February 2014. Concentric circles indicate the detection of bats within the landscape.

## 3.7.3.4 General Bat activity

Across the sample period bat activity is always higher below Meletse mountain (86.09 % at sites A & B) than at any of the sites on the mountain (13.91 % at sites C-E) (*Table 23* and *Figure 43*). The difference in activity levels at sites below and on the mountain is larger at the beginning of the sample period. Comparing sites A and B below the mountain, activity was initially highest at site A, but later this activity drops, and activity is highest at site B. On average activity was higher at site B than site A. Of the sites on Meletse mountain, on average activity was highest at site C, and least at site D.



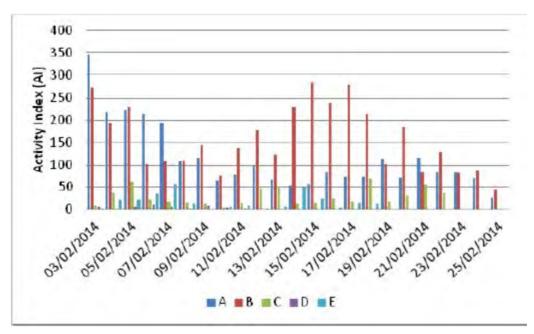


Figure 44: Nightly bat activity indices (AI) for five static detector stations (stations A-E colour coded as indicated below graph). Table 22 and Figure 42 indicate the different positions of each of the detectors.

Table 24: Summary of activity indices (AI) for general bat activity, five different species and one family call type, based on recordings from static detector stations deployed at five different sites (see Figure 42 and Table 22 for a description of the sites). Values represent the mean, standard deviation, and range of AI.

	Α	В	С	D	E
Number of nights recorded	23	23	23	23	16
General bat	114.13±75.01	157.83±72.05	24.78±20.00	2.09±3.39	17.06±16.75
	25 - 346	44 - 283	0 - 67	0 - 10	0 - 56
Miniopterus natalensis	87.26±74.54	120.26±58.48	17.13±15.48	2.52±4.13	8.38±10.47
	17 - 314	38 - 238	0 - 57	0 - 12	0 - 36
Neoromicia zuluensis	72.70±51.76	133.35±63.27	17.78±15.49	2.52±4.13	9.38±12.19
	18 - 240	44 – 246	0 – 51	0 - 12	0 - 43
Rhinolophus blasii	17.43±18.17	22.96±26.34	0.04±0.21	2.48±4.05	0.31±0.70
	1 - 62	2 – 104	0 – 1	0 - 12	0 - 2
Rhinolophus smithersi	8.35±5.01	10.78±10.26	2.52±5.38	0.00±0.00	2.88±3.59
	1 - 23	0 - 41	0 – 25	0	0 - 11
Rhinolophus simulator	8.13±9.26	20.91±22.21	0.13±0.46	2.43±3.98	0.19±0.40
	0 - 32	1 – 78	0-2	0 – 12	0 – 1
Molossidae	0.87±1.77	5.26±4.15	1.26±2.56	0.87±1.66	2.25±3.42
	0-7	0 – 17	0 – 12	0-6	0 - 12

#### 3.7.4 Reptiles and amphibians

The following information was obtained from the report: Pachnoda. February 2014. An ecological evaluation for the Aquila Steel project. The report is available under Appendix F1.

The study site falls within the extensive Waterberg bushveld region with a unique but widespread geology (Waterberg and Soutpansberg Groups) (van der Walt 2010). The Waterberg mountain range provides habitat for several reptile species found almost exclusively on the mountain e.g. Waterberg crag lizard (*Smaug breyeri*), Waterberg Dwarf Gecko (*Lygodactylus waterbergensis*) and Waterberg

quill-snouted snake (*Xenocalamus bicolor australis*) (Branch 1998). However, despite the geographic distribution restriction of these species to the mountain range, they are not listed as species of conservation concern due to the large extent of the Waterberg mountain range (~14500 km²). Furthermore, the herpetofauna of this mountain range enjoy a good degree of protection due to the fairly large portion of this area which is managed as game farms, private reserves, conservancy areas (Waterberg biosphere reserve; www.waterbergbiosphere.org) or national parks (Marakele).

The herpetofauna species observed are all common and typical of the bushveld complex. The three species of conservation concern that can potentially be found on the study site have relatively large geographic distributions in relation to the project property. While it is the author's opinion that both African rock pythons and African bullfrogs should almost certainly occur on the property, it is unlikely that Giant bullfrogs (*Pyxicephalus adspersus*) will be found here. Consequently, only species protected by NEMBA (2004) due to the risk of exploitation or over-utilization by humans are likely to occur on the property. The environmental management plan (EMP) should take the conservation of these species into account.

The lack of herpetofauna species protected by legislation or of major conservation concern should not detract from the fact that this unique habitat needs to be managed appropriately and with due consideration for the continued functioning of ecological processes both on the property and the surrounding environs. For example, the current habitat destruction that has taken place prior to this study could have been mitigated by the removal and relocation of disturbed animals or at least, the collection and preservation of the many animals that must have been killed during this process.

# 3.8 Invertebrates

The following information was obtained from the report: Pachnoda. February 2014. An ecological evaluation for the Aquila Steel project. The report is available under Appendix F1.

## 3.8.1 Butterfly taxa of special conservation concern

The only diurnal lepidopteron species of special concern that could occur on the study site is the univoltine *Dingana jerinae* (Jerine's Widow). *D. jerinae* is listed as "vulnerable" and is only known from the upper slopes of the nearby Kransberg mountain range (Henning *et. al.*, 2009). It is known from four discrete populations that are confined to high-altitude (1 850 – 2 000 m) grassland on steep southeast-facing slopes. It is on the wing from mid-November to mid-December.

Based on the habitat preference of *D. jerinae* (steep grassy south-facing slopes) and the presence of extensive *Protea*-dominated grassland (as mentioned by Henning *et al.* (2009)) on the study site, it is possible that this species could potentially occur. However, only a very small area of the suitable habitat (c. 8.4 ha) corresponds to the 1 800 m contour line which explains the eminent absence of this species during the November 2011 site investigation (Figure 45).



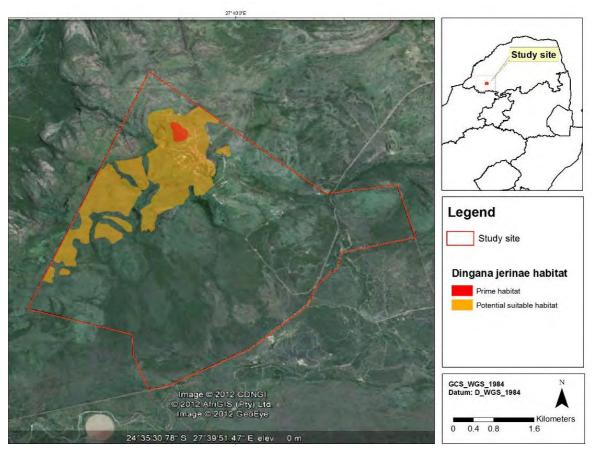


Figure 45: The spatial distribution of suitable (prime) and sub-optimal habitat for the occurrence of Dingana jerinae on the study site.

# 3.8.2 Scorpion taxa

Many scorpion taxa are substrate specialists and are therefore good indicators of environmental change. These species are so-called stenotropic based on their high habitat specificity. The table below lists those species observed or known to occur on the study site.

Table 25: A list of scorpion taxa known to occur on the study site.

Family	Species	Status
Buthidae	Parabuthus mossambicensis	Widespread and fairly common (mainly on sandy
		soils).
	Parabuthus transvaalicus	Widespread and very common from rocky areas.
	Uroplectes carinatus	Widespread and common.
	Uroplectes planimanus	Widespread on rocky areas.
	Uroplectes olivaceus	Widespread and confined to low-lying areas (gravel
		soils).
	Uroplectes triangulifer	Widespread and very common from all habitat
		types.
Liochelidae	Hadogenes troglodytes	Widespread and common from outcrops.

Scorpionidae	Opistophthalmus glabrifrons	Fairly common.
	Opistophthalmus carinatus	Fairly common.

Although a number of scorpion species are known to occur in the region only taxa pertaining to the genera *Hadogenes* and *Opistophthalmus* are considered to be of conservation concern. The genera *Opistophthalmus* and *Hadogenes* are protected by Schedule B1 of the list of threatened and protected species issued in terms of Section 56(1) of the National Environmental Management: Biodiversity Act, 2004. A permit is required to collect or transport any of these taxa although they are not protected by current legislation against habitat transformation

## 3.9 Surface water

The following information was obtained from the report: Shangoni Management Services. May 2014. Storm Water Management Plan for Aquila (Steel S Africa) (Pty) Ltd: Meletse Iron Ore Project. The report is available in Appendix F6.

#### 3.9.1 Catchment areas

The contravened site is located in the Limpopo River Catchment area, and within the A24H quaternary catchment area (Figure 46). This quaternary catchment area has a surface size of 23,762 km². This area is within the Limpopo/Olifants drainage region. The Sand River, a tributary to the Limpopo River, flows south past the Klipgat tenement. To the west flows the Sondags River through the Sandrivierpoort. The Sandspruit is a tributary to the Sand River and flows through the farm Donkerpoort. There are also many drainage lines from the mountainous areas towards the Sand River flowing in a southerly direction.

There are no perennial streams in the actual study area, but there are several non-perennial drainage lines feeding into permanent streams in the valley below the mountain. The non-perennial drainage lines, flows only during rain fall events.

Numerous drainage lines occur from the higher peaks in the north-eastern parts of the site and flows down towards the Sand River south of the site.

The drainage area in the vicinity of the site is well vegetated with grass and tree species accompanied by a combination of sandy and rocky areas forming initial hilly and steep topography that gradually flatten towards the south. The sub-catchment drainage density of the area is 1.56 km/m².



#### 3.9.2 Flood peaks

Flood peaks and volumes for recurrence intervals of 1:20, 1:50 and 1:100 years and the regional maximum flood are given in Table 26 below. The results are based on the Rational Method and storm rainfall for the station Kalkheuwel (550612).

The rational method was used to determine flood peaks and volumes for of the sub-catchment. The rational method is based on a simplified representation of the law of conservation of mass. Rainfall intensity is an important input for calculations. It is one of the best-known and the most widely used methods for determining peak flows from small catchments (< 15 km2). The peak flow is obtained from the formula that indicates that Q = CIA, where Q is the peak flow, C the runoff coefficient, C the rainfall intensity and C the effective area of the catchment.

Table 26: Flood Peaks and Volumes

Position	1:20 Years	1:50 Years	1:100 Years	RMF
Crocodile River	358 m³/s	584 m³/s	895 m³/s	2 790 m³/s

## 3.9.3 Mean annual runoff (MAR)

The natural surface Mean Annual Runoff (MAR) is approximately 646 million m<sup>3</sup>/annum.

## 3.9.4 Surface water quantity and use

Surface water is used mainly for agricultural purposes; with little domestic use.

## 3.9.5 Water authority

The contravened site falls within the Crocodile (west)/Marico water management area (Crocodile). The North West Department of Water Affairs is the responsible water authority.

## 3.9.6 Surface water quality

The northern part of the site falls within the River FEPA (Freshwater Ecosystem Protected Area) and associated sub-catchment area. River FEPAs achieve biodiversity targets for river ecosystems and threatened/near threatened fish species, and were identified in rivers that are currently in a good condition (A or B ecological category). Their FEPA status indicates that they should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources. FEPA status applies to the actual river reach within such a sub-quaternary catchment.

Further discussions pertaining to the ecological integrity of the receiving water courses (Sandspruit and Sondags River) are discussed below.



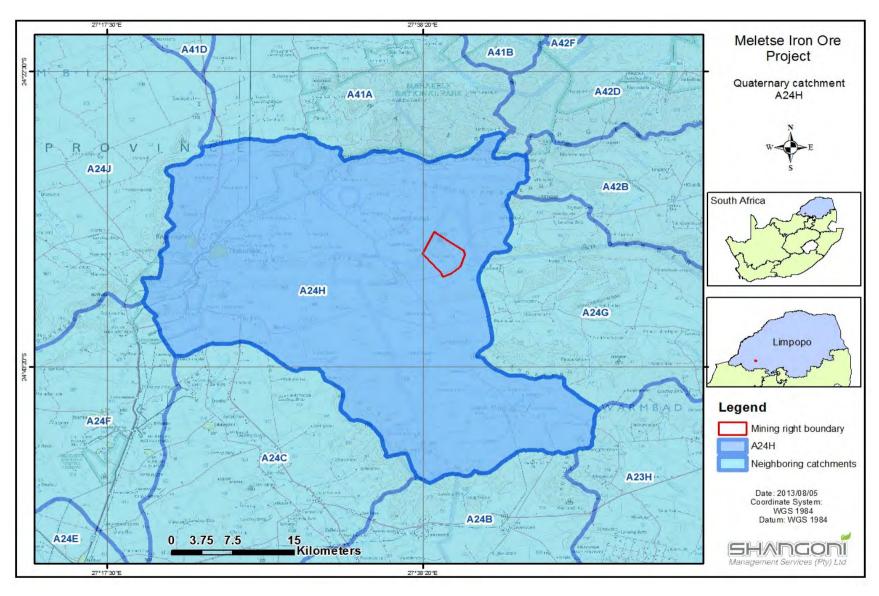


Figure 46: Quaternary catchment



# 3.9.6.1 Ecological integrity of the aquatic habitat

The following section has been obtained from the report: Roux, F & Newham J. February 2014. The Ecological Integrity of the aquatic habitat at the proposed Aquila Steel mine on the Farms Donkerpoort 448KQ and Randstephne 455KQ, Thabazimbi district, Limpopo Province, South Africa. The report is available in Appendix F10.

The field surveys were conducted in April 2011. There were 6 points visited, and of these 3 sites were suitable for sampling. They are referred to as sites 4, 5 & 6, and can be used for any subsequent monitoring of impact. In Figure 47 and Table 27, the location of the sites are indicated.

Table 27: Presenting the details for each site visited during the field assessment

Site No. & GPS Co		River	Sampling	Details
(Name)	ordinates			
Site 1	S24° 34' 23.2"	Non-perennial	None	No water at the time of visit due
	E027° 41' 32.2"	drainage line of		to late rains. Crosses the road.
		Sand River		
Site 2	S24° 34' 46.4"	Non-perennial	None	No water at the time of visit due
	E027° 41' 13.9"	drainage line of		to late rains. Observed some
		Sand River		macro-invertebrates
				gyrinnidae, crabs and adult
				dragon flies.
Site 3:	S24° 35' 02.6"	Non-perennial	None	Significant flow at the time of
Sand	E027º 41' 03.6"	drainage line of		visit due to late rains. Murky
tributary		Sand River		water.
Site 4:	S24° 35' 15.8"	Sand River	Fish	Flowing water. Surveyed
Sand	E027° 41' 03.4"		Macro	between the bridge and fence
Road			Invertebrates	downstream. Surrounding
			Habitat	vegetation SVcb 16 mainly,
			Water quality	marginally SVcb 17.
Site 5:	S24° 35' 38.7"	Sand River	Fish	Flowing water. Surveyed below
Sand	E027° 41' 05.0"		Macro	the weir in front of the lodge.
Lodge			Invertebrates	Dirt road crosses the stream.
			Habitat	Surrounding vegetation SVcb
			Water quality	16 mainly.
Site 6:	S24° 37' 10.45"	Sondagsrivier	Fish	Flowing water. Surveyed the
Sondags	E027° 36' 24.67"		Macro	bridge. Surrounding vegetation
Bridge			Invertebrates	SV cb 16 mainly. Much wider
			Habitat	than Sand River. Before the
			Water quality	confluence with the Sand.



The Present Ecological Status (PES) of the river is expressed in terms of various components that is drivers (physic-chemical, geomorphology, hydrology) and biological responses (fish, riparian vegetation and aquatic invertebrates), as well as an integrated state, the ecostatus.

The scale used for river health describes five different states of health, from an A class (natural) to an E class (unacceptable). The results of applying the biological and habitat indices during a river survey provide the contexts for determining the degree of ecological modification at the monitoring site. Thus, the degree of modification observed at a particular site translates in to Present Ecological State.

Class	Ecological State of River	Description
А	Natural	No measurable modification
В	Good	Largely unmodified
С	Fair	Moderately modified
D	Poor	Largely modified
Е	Unacceptable	Seriously/critically modified



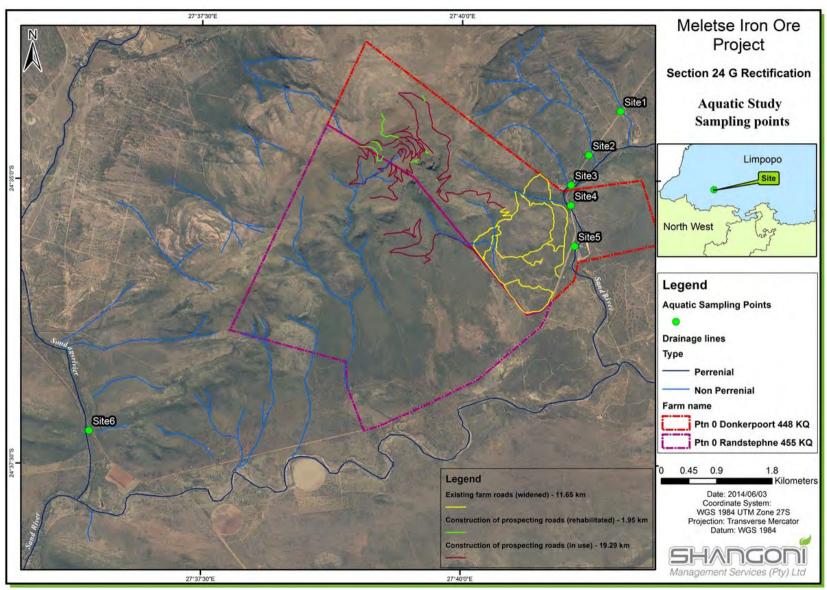


Figure 47: The location of all the sites visited and / or sampled



#### Riparian

The riparian zone is very narrow in the Sand River / Zandspruit sites, and is dominated by grass. Generally the riparian is considered to be in a good condition. The Sondagsrivier site is considerably wider with a more extensive riparian zone comprising of grass and trees mainly. The concern at the Sondagsrivier site is the invasion of Seringa plants, but otherwise considered to be good condition.

The major concern is that the surface flow of the Zandspruit disappears before being crossed by the road to Rooiberg. It is most likely due to over abstraction and the series of weirs located in the stream.

#### **Macro Invertebrates and Habitat Assessment**

In summary in terms of the macro-invertebrates the streams surveyed are in good condition and are only slightly impacted. These sites can be used as a bench mark for monitoring of water quality, because if high siltation comes down the non-perennial streams draining the mountain where the contravened site is located, it will impact on the streams / rivers surveyed during this assessment. This will result in a change in water quality at these identified sites.

#### **Fish**

Site 4: This stream is a tributary of the Zandspruit and forms part of the drainage line on the farm Donkerpoort 448KQ. The water observed in this stream is primarily runoff from within the Meletsi Mountain catchment and it formed a run as well as a small riffle. At this aquatic habitat the fish velocity depth classes identified were **slow shallow** (moderate) and **fast shallow** (moderate). The cover present was in the form of overhanging vegetation which was also rated moderate, undercut banks and root wads was rated sparse with an adequate substrate (moderate to abundant). Although this habitat sampled (electro shocked) for 19 minutes, no fish were found. This is most probably not related to upstream impacts and modifications, but rather due to instream use and surrounding area land use in the form of irrigational abstraction. During the dry season there is most probably little to no water present in this stream, resulting in limited available habitat to fish. Also due to the small size and runoff gradient emigration of fish to this stream is very unlikely. Water quality at this site was within the expected range.

Site 5: The aquatic habitat surveyed at this location in the Zandspruit is downstream from a small weir at the lodge on the farm Donkerpoort 448KQ. The habitat type was mainly a riffle with fish velocity depth classes recorded as slow shallow (moderate) and fast shallow (abundant). The fish cover present identified was sparse over hanging vegetation and sparse under cut banks and root wads. The substrate was moderate to abundant. In total eight of the thirteen expected species were recorded which included stream dependent species preferring fast shallow / slow shallow habitats with undercut banks and marginal vegetated areas were moderate in abundance (Barbus trimaculatus, Barbus marequensis and Barbus paludinosus). Other species identified included Barbus unitaeniatus, Tilapia sparmanii, Pseudocrenilabrus philander, Oreochromis mossambicus and Clarias gariepinus. The absence of Anguilla mossambica at this site can largely be attributed to the presence of large



obstructions down stream preventing recolonisation of this catadromous species (those that migrate to sea to breed). In most of the fish species collected the age classes reflected adults and sub-adults which is a clear indication that a viable population is present with breeding function not disrupted at present. For a small stream this size the presence of eight species and their relative abundance (132 individuals) with a CPUE (catch per unit effort) of 4.21 indicates a healthy stream. According to the rule based FRAI the Present Ecological Class of this site is a low class B (slightly modified for fish).

Site 6: This monitoring site within the Sondagskraal spruit is situated downstream of the bridge of the main road to the proposed development site. The habitat type observed included a large riffle and run, with pools and back water. The fish velocity depth class included sparse slow deep, moderate slow shallow and abundant fast shallow depth classes. The fish cover present was moderate over hanging vegetation with sparse undercut banks and rood wads with an abundant substrate. In total nine of the thirteen expected species were recorded which included stream dependent species preferring fast shallow / slow shallow habitats with undercut banks and marginal vegetated areas were moderate in abundance (Barbus trimaculatus, Barbus marequensis, Barbus paludinosus, Labeo cylindricus, Labeo molybdinus and Chiloglanis paratus). Other species identified included Clarias gariepinus, Tilapia sparmanii and Pseudocrenilabrus philander. Once again the absence of Anguilla mossambica at this site can largely be attributed to the presence of large obstructions down stream preventing recolonisation of this catadromous species (migrate to sea to breed). In most of the fish species collected the age classes reflected adults and sub-adults which is a clear indication that a viable population is present with breeding function not disrupted at present. For a small stream this size the presence of nine species and their relative abundance (126 individuals) with a CPUE (catch per unit effort) of 3.6 indicates a healthy stream. According to the rule based FRAI the Present Ecological Class of this site is a low B (slightly modified for fish)

## 3.9.6.2 Freshwater Ecosystem Assessment

The following section was obtained from the report: Zone Land Solutions. June 2014. Freshwater Ecosystem Assessment, Meletse Iron Ore Mining. The report is available in Appendix F17.

#### Hydrogeomorphic unit

The hydrogeomorphic unit assigned for the watercourses' on the assessment site are classified and described below.

The first identifiable hydrogeomorphic unit for the proposed site can be classified as being a number of non-perennial drainage lines (refer Figure 10). A non-perennial drainage line is defined as one that does not flow or hold water continuously throughout the year. Non-perennial drainage lines are then further subdivided into seasonal, intermittent and unknown categories further described below:

 Seasonal: with water present for extended periods during the wet season but not during the rest of the year.



- Intermittent: containing water for a relatively short time (less than one season's duration) at intervals varying from less than a year to several years, implying a far less predictable situation compared to perennial or seasonal flow regimes.
- Unknown: for situations where it is not known whether a non-perennial system is seasonal

The drainage lines flowing down the Meletse mountain are seasonal non-perennials that flow during the rainy summer months with occasional water flow during the winter periods. During drought periods however, it is likely that they remains dry throughout the year.

The primary longitudinal zone associated with the non-perennial drainage lines is 'Headwater.' The dominant hydrological input is from hillslope or valleyhead seepage. The dominant throughput and output is concentrated surface flow (which occurs during the rainy season).

The second hydromorphic unit identified on the site is a freshwater mountain spring that supports a riparian zone, refer *Figure 48*, *Figure 49* and *Figure 50*.

According to DWAF (2005), Riparian areas: are associated with a watercourse. They contain various different plant species to adjacent areas and, contain species similar to adjacent areas but exhibit more vigorous or robust growth forms. They may also have alluvial soils. Riparian areas perform a variety of functions that are of value to society, especially the protection and enhancement of water resources, and provision of habitat for plant and animal species DWAF (2005).

These riparian areas have a variety of important functions, including DWAF (2005):

- storing water and helping to reduce floods,
- stabilizing stream banks;
- improve water quality by trapping sediment and nutrients;
- maintain natural water temperature for aquatic species;
- provide shelter and food for birds and other animals;
- provide corridors for movement and migration of different species and;
- act as a buffer between aquatic ecosystems and adjacent land uses.



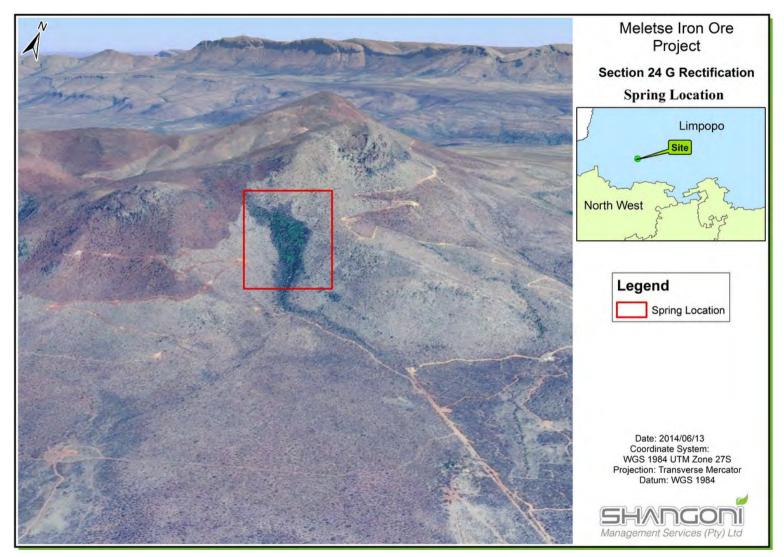


Figure 48: Riparian zone and location of the spring





Figure 49: The spring surfacing from beneath the roots of large tree



Figure 50: The spring surfacing from beneath the roots of large tree

The intensity of impact to the hydrological regime of the system is rated according to the WET-Health (2008:50) criteria. The site receives a 'moderately small (-2.0-3.9)' hydrological alteration class because although identifiable, the impact of the modifications on the hydrological integrity is small as the majority of the general assessed site is still undeveloped and unutilized. There are however infrastructure developments that have taken place on the face of the mountain including the grading of



roads to access the core prospecting area (the peak of Meletse) that could have an impact on the hydrological regime through the segmenting or shortening of natural draining lines.

#### **Natural Characteristics**

The surface substratum identified for the sampled drainage lines include mostly a compacted clay and fine sand mixed with many scattered cobbles and small boulders (*Figure 51*).



Figure 51: Drainage line substratum.

# Flora

The site is mostly untransformed (with the exception of the roads that have been graded for the mining operations) and is covered with mostly woody natural forest vegetation that is synonymous with the Sour bushveld. Smaller areas surrounding the drainage line areas contain more abundant, greener and taller vegetation, which is an indication that these areas support riparian zone features (*Figure 52* and *Figure 53*).





Figure 52: The riparian zone supported by the natural mountain spring.



Figure 53: A view from within the riparian zone supported by the natural mountain spring.

#### Fauna

A variety of birds were heard and observed in-flight and during the sight visit. No mammals or amphibians were observed during the site visit however this is **not** an indication that the area does not support a healthy variety of mammals and amphibians such as small predators, duikers, field mice and frogs.



#### **Ecological Importance and Sensitivity**

The EIS of the site is rated in the 'Moderate' category. This category is one assigned to systems that are considered to be unique or significant on a provincial or local scale. These systems are not very sensitive to flow modifications. A number of the various drainage lines however flow into the Sondag and Sand rivers which are key water resources for the catchment.

EI&S Categories	General Description
Very high	Quaternaries/delineations that are considered to be unique on a national or even international level based on unique biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are usually very sensitive to flow modifications and have no or only a small capacity for use.
High	Quaternaries/delineations that are considered to be unique on a national scale due to biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) may be sensitive to flow modifications but in some cases, may have a substantial capacity for use.
Moderate	Quaternaries/delineations that are considered to be unique on a provincial or local scale due to biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are usually not very sensitive to flow modifications and often have a substantial capacity for use.
Low/marginal	Quaternaries/delineations that are not unique at any scale. These rivers (in terms of biota and habitat) are generally not very sensitive to flow modifications and usually have a substantial capacity for use.

Figure 54 Ecological Importance and Sensitivity categories

## **Present Ecological Status**

The roads toward the peak of the Donkerspoort mountain intersect drainage lines and hug the riparian zone supported by a freshwater mountain spring.

Due to the network of graded prospecting roads that traverse the site, intersecting drainage lines and having required the removal of indigenous vegetation (*Figure 55* & *Figure 56*), the PES of the site receives an ecological category rating 'C.' The PES score associated with this rating is 60-80% and, is described as being 'moderately modified.' This category is assigned to systems where a change in biota and habitat loss has taken place, but the ecosystem functions still remain relatively unchanged.





Figure 55: Prospecting road crossing an un-channeled drainage line.



Figure 56: The road that has been cut into the side/face of the mountain.

# 3.10 Groundwater

The following section was compiled using: Groundwater Complete. March 2014. Report on Geohydrological investigation as part of the EIA and EMP. The report is contained in Appendix F2.



#### 3.10.1 Ambient Geohydrological Conditions

#### 3.10.1.1 Groundwater Use (user survey/hydrocensus results)

Numerous hydrocensus and groundwater user surveys were conducted within a  $\pm$  20 km radius of the Meletse Project area. A summary of the findings is provided in Table 28, while the complete hydrocensus report is provided in Appendix F2 where all hydrocensus points are discussed as well as groundwater levels, qualities and other information. A total of 76 boreholes were located and their positions are indicated in Figure 58.

The pie chart provided below in Figure 57 indicates that approximately 29% of boreholes located during the user surveys are used for domestic water supply, while  $\pm$  24% are used to provide water for livestock. A large portion of the boreholes ( $\pm$  33%) are however currently not in use as a result of obstacles blocking access to their water levels or pumps not being operational. Only approximately 5% of boreholes located during the numerous surveys are used for small scale irrigation.

Widespread pollution or depletion of the groundwater resource will impact negatively on:

- The groundwater resource itself and interrelations with other natural resources (e.g. rivers and streams), and
- The users that depend on groundwater as sole source of domestic water as well as for livestock and gardening.

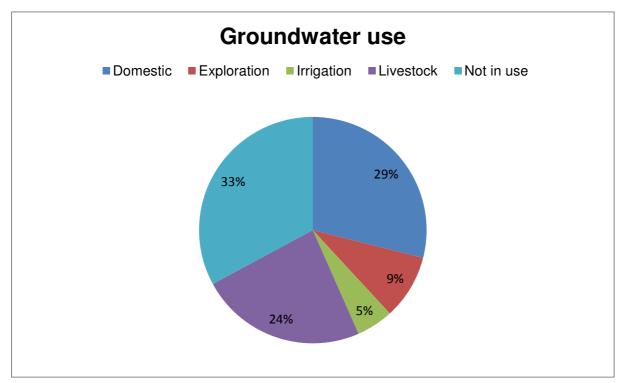


Figure 57: Results of groundwater user survey



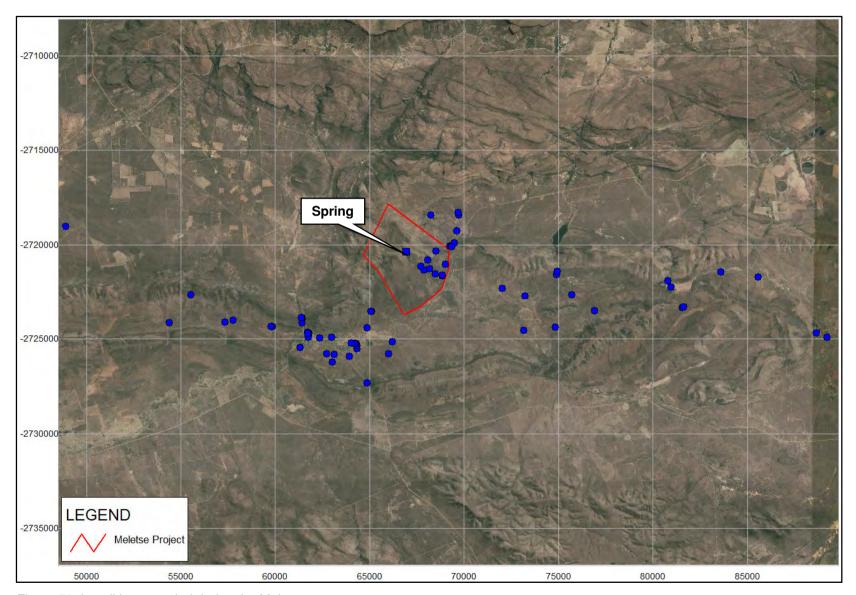


Figure 58: Localities recorded during the Meletse user surveys



Table 28: Summary of hydrocensus and groundwater user survey

ВН	South	East	Use	SWL	Depth
				(m)	(m)
AVANCOLLER1	-24.58330	27.68368	Domestic	9.4	27
AVANCOLLER2	-24.58328	27.68428	N/A	6.9	27
AVANCOLLER3	-24.58190	27.68621	N/A	9.8	57
AVANCOLLER4	-24.58374	27.68484	N/A	N/A	N/A
AVANCOLLER5	-24.56857	27.67384	N/A	7.8	>120
JANCOETZER1	-24.56841	27.68844	Domestic, livestock	31.2	60
JANCOETZER2	-24.56715	27.68794	Livestock	14.3	65
JANCOETZER3	-24.57600	27.68726	Domestic, livestock	15.8	60
MARTIN1	-24.63128	27.63526	Not working currently	21.1	30
MARTIN2	-24.63128	27.63526	Irregation	22.9	50
MARTIN3	-24.63036	27.63514	Irregation	N/A	50
MARTIN4	-24.63045	27.63476	Irregation	21.7	30
MARTIN5	-24.63045	27.63476	N/A	N/A	30
MARTIN6	-24.63039	27.63395	Domestic	N/A	30
MARTIN7	-24.63011	27.63250	Dry @ 17 m	Dry	17
MARTIN8	-24.63646	27.63157	Domestic, irrigation	23.1	30
MARTIN9	-24.64911	27.64080	Livestock	N/A	N/A
MARTIN10	-24.63506	27.65187	Livestock	N/A	N/A
MARTIN11	-24.62933	27.65396	Livestock	N/A	N/A
MARTIN12	-24.62277	27.64078	Livestock	N/A	N/A
MARTIN13	-24.63272	27.63546	N/A	17.2	60
MARTIN14	-24.62747	27.62203	Dry @ 8 m	N/A	N/A
MELETSE01	-24.62388	27.87577	Domestic	23.3	60
MELETSE02	-24.62605	27.88131	Livestock	N/A	N/A
MELETSE03	-24.59718	27.84512	Domestic	29.4	60
MELETSE04	-24.59499	27.82561	Future plans	N/A	N/A
MELETSE05	-24.59945	27.79777	Domestic	14.3	50
MELETSE06	-24.60241	27.79946	Domestic	17.4	86
MELETSE07	-24.61225	27.80557	Livestock	31.2	75
MELETSE08	-24.61225	27.80557	Dry @ 34.7 m	N/A	N/A
MELETSE09	-24.61202	27.80616	Domestic	31.4	90
MELETSE10	-24.59658	27.73955	Pump fitted not working	N/A	N/A
MELETSE11	-24.59516	27.74009	Blocked @ 7.4 m	N/A	N/A
MELETSE12	-24.60330	27.71133	Domestic	25.6	100
MELETSE13	-24.60693	27.72320	Livestock	20.6	75
MELETSE14	-24.60693	27.72320	N/A	20.7	75
MELETSE15	-24.62373	27.72262	Irrigation	N/A	N/A
MELETSE16	-24.62192	27.73928	Livestock	47.1	100
MELETSE17	-24.60626	27.74775	Future plans	N/A	N/A
MELETSE18	-24.61406	27.75972	Future plans	39.1	100
MELETSE19	-24.61406	27.75972	Future plans	37.2	100
VENTER01	-24.62246	27.59105	Domestic	49.0	60
VENTER02	-24.62233	27.59059	Domestic	N/A	100
VENTER03	-24.62023	27.56646	Domestic	N/A	100
VENTER04	-24.57466	27.48286	Livestock	N/A	100
VENTER05	-24.62062	27.60671	N/A	6.7	100
VENTER06	-24.61810	27.60648	Livestock	N/A	100
VENTER07	-24.61497	27.64282	Livestock	N/A	100



ВН	South	East	Use	SWL (m)	Depth (m)
BH01	-24.62490	27.60960	Domestic, livestock	N/A	30
BH02	-24.62557	27.61039	Irrigation, livestock and domestic	N/A	24.8
BH03	-24.62758	27.60998	Future use	14.2	130
BH04	-24.62512	27.60964	Nu use	14.6	30
BH05	-24.62784	27.61596	Rooiberg water supply	N/A	28.25
BH06	-24.63239	27.60565	Future use	8.8	32
BH07	-24.62555	27.60953	Future irrigation	14.6	20.25
BH08	-24.63512	27.61957	Domestic, livestock	13.3	100
BH09	-24.63554	27.62339	Blocked @ 14 m	N/A	N/A
BH10	-24.63903	27.62253	Blocked @ 20.6 m	N/A	N/A
Wv 1	-24.62250	27.59100	Domestic	N/A	N/A
Wv 2	-24.62238	27.59054	Domestic	N/A	N/A
Wv 3	-24.62030	27.56646	Wildlife	N/A	N/A
Wv 4	-24.62078	27.53723	Wildlife	N/A	N/A
Wv 5	-24.60717	27.54849	Wildlife	16.8	N/A
Wv 6	-24.61953	27.57075	Wildlife	N/A	N/A
Wv 7	-24.61796	27.60618	Wildlife	N/A	N/A
Wv 8	-24.61484	27.64274	Wildlife	N/A	N/A
Dp 1	-24.61912	27.60669	Domestic	N/A	N/A
Dp 2	-24.59742	27.67999	Domestic	34.1	N/A
Dp 3	-24.59677	27.67635	N/A	46.3	N/A
DT1W	-24.58997	27.67222	Domestic and exploration	103.0	N/A
DT4L	-24.59205	27.68135	Domestic and exploration	72.0	N/A
Waterhole1	-24.59728	27.67996	Domestic and exploration	N/A	N/A
Waterhole2	-24.59313	27.66863	Domestic and exploration	194.0	N/A
DT81	-24.59483	27.67011	Domestic and exploration	80.1	N/A
DT79	-24.58568	27.67646	Domestic and exploration	N/A	N/A
DT80	-24.59436	27.67307	Domestic and exploration	68.8	N/A
Spring	-24.58627	27.66093	Livestock	N/A	N/A

Note: Coordinates - WGS84.

#### 3.10.2 Groundwater Zone

# 3.10.2.1 Unsaturated Zone

Soil development in the northern half of the mining rights area is virtually non-existing with the unsaturated zone mainly being composed of scree and weathered rock. The unsaturated zone in the southern portion is however composed of freely drained and structureless soils of varying depths. Underneath the soils the unsaturated zone is characterised by weathered or fresh rock and scree originating from the mountain. The unsaturated zone impacts on the aquifer in terms of both groundwater quality and quantity.

The permeability and thickness of the unsaturated zone are some of the main factors determining the infiltration rate, the amount of runoff and consequently the effective recharge percentage of rainfall to the aquifer.



The type of material forming the unsaturated zone as well as the permeability and texture will significantly influence the mass transport of surface contamination to the underlying aquifer(s). Factors like ion exchange, retardation, bio-degradation and dispersion all play a role in the unsaturated zone.

The thickness of the unsaturated zone was determined by subtracting the pre-mining static water levels in the study area from the topography. Water level measurements in boreholes of users in the area as well as in purpose drilled monitoring and water supply boreholes showed that the depth to water level, and thus the unsaturated zone, generally varies between  $\pm$  10 and 194 meters below surface (Figure 60). The thickness of the unsaturated zone is expected to be even deeper in the northern half of the mining rights area with a depth of >500 meters estimated for the area underlying the proposed opencast pit.

#### 3.10.2.2 Aquifer Delineation

Aquifer delineation is conducted to indicate the lateral extent of the aquifer(s) in the area. An aquifer can be delineated in more than one way, such as:

- Using high or low topographical areas over which flow is not possible under steady state conditions;
   and
- Mapping structures such as intrusive dykes, progressive sills or displacement faults that act as groundwater flow barriers.

The first method where the topographical high and low areas are taken into account was used to delineate the Meletse aquifer. The aquifer will start to the north of the project area on the higher topographical regions and extents to the Sand River in the south where it discharges. The delineated aquifer in the Meletse area is presented in Figure 59.



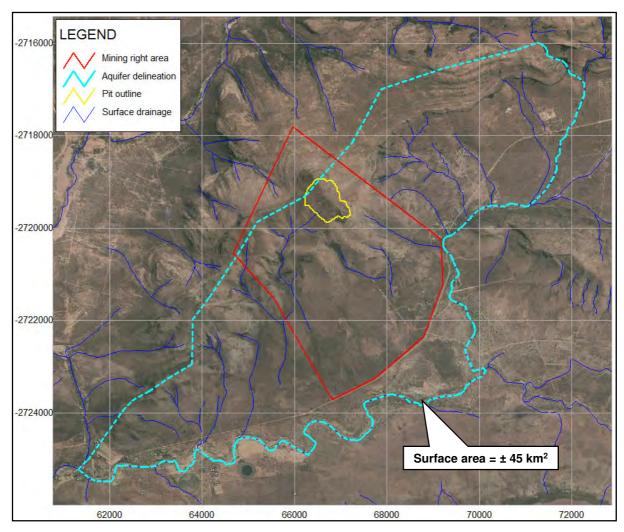


Figure 59: Delineated aquifer for the Meletse Project area

Nonetheless, because the main aquifer is a fractured rock type and fractures could assume any geometry and orientation, the physical boundary or 'end' of the aquifer is very difficult to specify or quantify and over or under estimations are bound to occur.

Aquifer boundaries in a model are usually either **no-flow boundaries** (groundwater divides), **general head boundaries** or **constant heads**:

- No-flow boundaries are groundwater divides (high or low areas/lines) across which no groundwater flow is possible;
- Constant head boundaries are positions in the model where the groundwater level is fixed at a certain elevation and cannot change; and
- With general head boundaries, also known as flux boundaries, the model uses the average groundwater gradient and hydraulic properties specified at the position of the boundary to allow flow across the boundary based on the hydraulic conditions.

In the regional model constructed to include the entire project area, only flux boundaries were used as model boundaries (Figure 60). The constant head boundaries were not inserted as constant head



nodes in the model, but river nodes were rather employed on the same elevations and positions where the streams occur near the mining areas. The 'rivers' act very much the same as constant head boundaries. Water levels in the aquifer are largely fixed at these points and the river nodes will add water to (act as a losing stream) or remove water from (as a gaining stream) the aquifer if the surrounding model water levels respectively decrease below or rise above the assigned elevation of the river.

#### 3.10.2.3 Aquifer Thickness

Considering the fact that the actual 'aquifer' consists of transmissive fractures, fissures or cracks of any orientation, extent of aperture in any of the rock types underlying the site, an approximation can at best be made on the thickness of the aquifer.

Some minor water-yielding fractures were intersected during the drilling of numerous water supply and groundwater monitoring boreholes. Such fractures occurred at depths varying between  $\pm$  18 and 63 meters below surface. It is thus considered more accurate or appropriate to calculate the aquifer thickness as being the difference between the piezometric water level and the deepest water yielding fractures in the study area. On this basis, the aquifer thickness in the Meletse Project area is estimated to vary between approximately 10 and 30 meters.

Please note that the estimation of the aquifer thickness includes both the shallow weathered zone aquifer and deeper fractured rock aquifer as additional drilling data is required to make a clear distinction. It is also our experience that there is often not a clear layer or formation that separates the shallow and deeper aquifer. The distinction is mainly made based on the degree of primary or secondary porosity of the aquifer(s) based mostly on weathering depth.

### 3.10.2.4 Generalised Conceptual Model

In order to predict the movement of water and mass in the subsurface, a conceptual geohydrological model of the area was formulated. The basis of such a model is the structural geological make-up of the study area. Most of the supporting data and information are discussed in detail in the report, as per Appendix F2.

The geohydrological regime in the study area is made up of two main aquifer systems. The first, the upper, unconfined to semi-confined aquifer is usually developed on the contact between the fresh/unweathered Transvaal Supergroup rocks and overlying scree and weathered material. Although low yields occur in this aquifer, it is developed widely throughout most of the project area and has been the sole reliable source of water supply to most of the farms in the area.

The second aquifer is associated with fractures, fissures, joints and other discontinuities within the consolidated bedrock and associated intrusives of the Transvaal Supergroup. It is semi-confined and has greatly varying yields that are directly associated with the geology and geological structures.



Contrary to general beliefs, the dolomite underlying the project area is not a significant aquifer and no significant water strikes were intersected during the drilling of eleven boreholes.

The shallow weathered zone aquifer is undeveloped throughout most of the northern half of the prospecting area.

Water entering the system will migrate vertically downwards until a more impervious layer that forms a perched aquifer is encountered. Over the longer term it is likely that the majority of recharge water will migrate downwards into the saturated zone of the deeper solid bedrock aquifer. From there it will migrate in the direction of the hydraulic gradient until it eventually reaches discharge areas.

## 3.10.3 Presence of Boreholes and Springs

As mentioned previously, hydrocensus surveys were conducted as part of this study around the Meletse mining right areas (Table 28). As part of the study, boreholes and springs were mapped within a  $\pm$  20 km radius of the project area.

The survey area was extended because the radius of influence depends strongly on geological structures such as faults and dykes (preferred groundwater flow paths), groundwater gradients, nearby mining operations and the presence of other groundwater production boreholes or dewatering from mining in the area.

Different types of groundwater information were obtained for a total of 76 points during the groundwater user surveys conducted for the Meletse Project. The water supply source of nearby users was sampled and analyzed for macro element inorganic chemistry. No springs were recorded during the two surveys conducted for the project. However, a spring was located by another specialist just before submission of the final report. The spring is situated on the Aquilla properties at the position indicated in Figure 58. The characteristics (quality and flow rate) of the spring will be investigated during June 2014 and the information will be provided to update the report. Springs in a semi-confined or confined fractured rock aquifer usually occur where structural discontinuities in the aquifer bisect the confining layer/material and a fracture or fracture system reaches the surface. For a spring to occur, the water level or piezometric head at that point in the aquifer must be higher than the land surface.

Although the natural trend for the groundwater level or piezometric head is to follow the surface topography, the water level is the closest to surface in the topographically low-lying areas. For this reason, springs will mostly occur in these areas, or at least on the slopes of hills. In perched and confined aquifers however, groundwater or piezometric levels may also be high in topographical higher lying areas with subsequent spring formation.

Information of the groundwater supply and monitoring boreholes are provided in Table 29.



Table 29: Summary of groundwater supply and monitoring borehole data

ВН	South	East	Water	Water level	Depth	Yield	Comment	Purpose
			strike	(m)	(m)	(I/s)		
			depth (m)					
MMBH01	-24.61201	27.66183	32 (moist)	N/A	30	0	Dry @ 38.8	Source
								monitoring
MMBH02	-24.59947	27.66834	35 (moist)	N/A	40	0	Blocked @ 45	Source
								monitoring
MMBH03	-24.60456	27.66608	35 (moist)	32.8	40	0	Clear	Source
								monitoring
MWBH01	-24.61014	27.64942	55	52.4	80	0.4	Clear	Water
								supply
MWBH02	-24.61310	27.64872	None	N/A	20	0	Dry @ 14.8	Water
								supply
MWBH03	-24.61555	27.65153	None	57.5	80	0	Turbid	Water
								supply
MWBH04	-24.61332	27.65502	None	51.7	80	0	Clear	Water
								supply
MWBH05	-24.61406	27.65800	42	39.3	90	0.4	Clear	Water
								supply
MWBH06	-24.61813	27.65516	None	N/A	20		Dry @ 24.9	Water
								supply
WBH04	-24.60465	27.64348	61	N/A	100	0.2	Demolished	Water
								supply
WBH05	-24.59544	27.65164	92	26.4	100	0.8	Clear	Water
								supply
WBH08	-24.59661	27.67622	80	46.1	100	1.6	Clear	Water
								supply
WBH10	-24.59172	27.68106	None	50.3	80	0	Clear	Water
								supply
WBH12	-24.58634	27.68106	80	N/A	100	0.3	Demolished	Water
								supply

# 3.10.4 Groundwater Flow Evaluation

#### 3.10.4.1 Depth to Water Level

The groundwater level depth varies from approximately 10 to 194 meters below surface and is expected to be even deeper in the northern half of the mining rights area where the proposed opencast mining will occur. Most groundwater levels (>20 meters below surface) are representative of the deeper fractured rock aquifer and not of the shallow weathered zone aquifer.

A thematic map showing average groundwater level depths below surface for all available boreholes is presented in Figure 60. The water table in the area generally follows the surface topography, except in



the mountainous areas where groundwater levels are expected to be much deeper. The water levels measured in the hydrocensus and monitoring boreholes confirm this fact with Figure 60 clearly indicating deeper water levels closer to the mountainous areas.

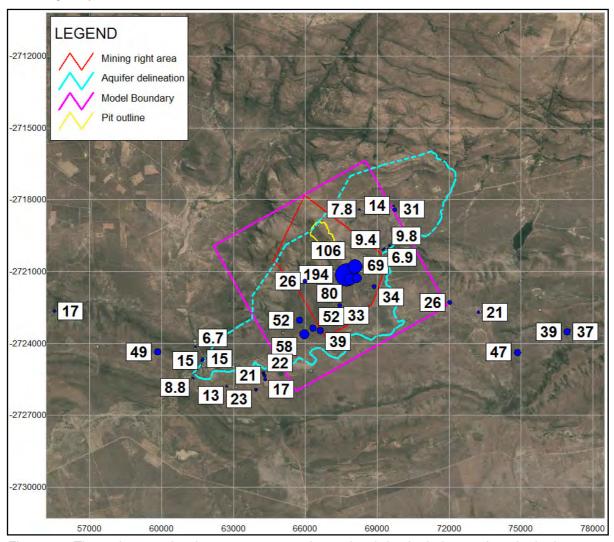


Figure 60: Thematic map showing average groundwater level depths below surface for hydrocensus boreholes

**Note:** Only groundwater levels within  $a \pm 10$  km radius of the mining rights area are indicated in Figure 60.

Some groundwater levels measured during the hydrocensus were significantly deeper than the general trend due to groundwater abstraction for the purpose of domestic use. Due to the generally low aquifer transmissivities the groundwater abstraction causes a deep drawdown of the groundwater levels/piezometric heads and depression cones form that are deep, but very limited in lateral extent (Figure 61).



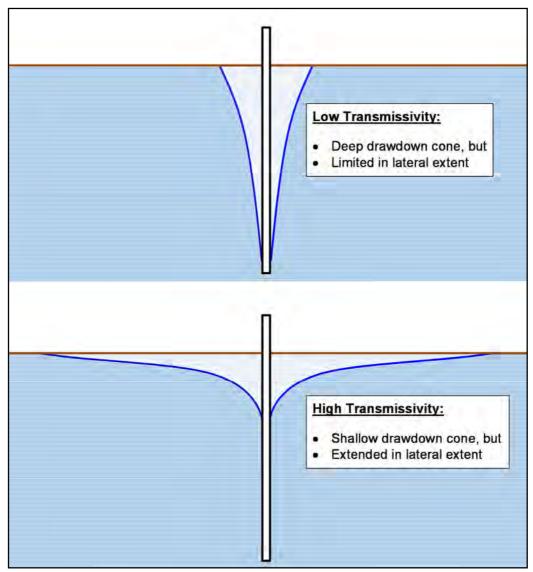


Figure 61: Effect of aquifer transmissivity on depression cone

All available groundwater levels will be used as calibration points for the numerical groundwater flow model to verify the conceptual model and construction thereof. Seen in the light of water level differences because of mining, pumping and recharge effects, filtering and processing of water levels are conducted to remove water levels considered anomalous high or low. In order to identify the water level anomalies a statistical analysis were conducted during which the correlation between the water level elevations and the elevations of the boreholes were calculated.

After the anomalies were identified and removed, a  $\pm$  77% correlation was achieved. This correlation is not very good and is considered to be a direct result of the highly variable topography, especially the steep and high mountain range. The correlation graph is indicated in Figure 62. The final interpolated digital terrain model of the water levels is thus bound to contain local over- or under estimations of the actual water levels, but it will be representative of the general regional trend of the static groundwater level.



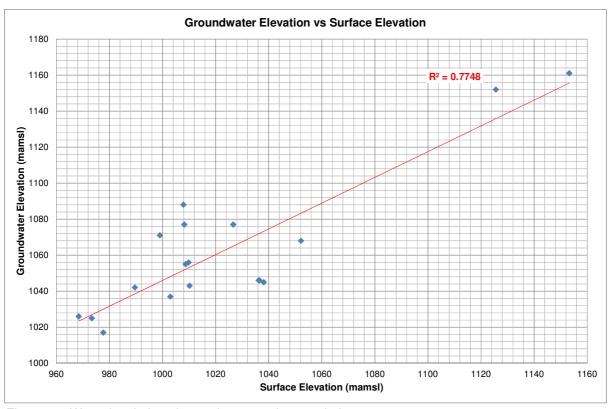


Figure 62: Water level elevation and topography correlation

The natural interpolated groundwater level contours (without impacts from mining/other) were estimated through Bayesian interpolation and are presented in Figure 63. The natural flow direction of groundwater in the weathered zone aquifer in the project area was derived from the abovementioned figure and is generally towards the south, south-east and south-west in the direction of the Sand River. According to Figure 63 the lowest groundwater level elevation is approximately 900 mamsl and occurs to the south of the study area, while the highest elevation of  $\pm$  1 650 mamsl occurs in the mountainous region where the prospecting and associated road construction has taken place.



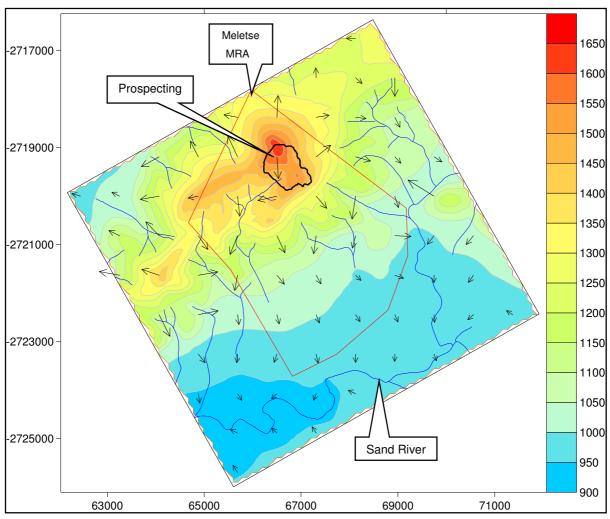


Figure 63: Bayesian interpolated groundwater level contours

## 3.10.4.2 Flow Gradients

The general groundwater flow direction in the Meletse model area is towards the south, south-east and south-west in the direction of the Sand River at an average gradient of approximately 6.5% (Figure 63). The groundwater gradient below the mountain (in the proposed pit area) is approximately 14%, which will cause higher flow and mass transport rates. Below the foot of the mountain, where the processing infrastructure is to be located, the average gradient of the groundwater level is around 4%, which means that flow and mass transport rates will be correspondingly lower.

#### 3.10.5 Aguifer Types and Yield

Two interacting aquifer systems were identified in the project area, although they are of the same aquifer type. For the purpose of this study an aquifer is defined as a geological formation or group of formations that can yield groundwater in economically useable quantities. Aquifer classification according to the Parsons Classification system is summarised in Table 30.



The **first aquifer** is a shallow, **semi-confined or unconfined aquifer** that occurs in the transitional soil and **weathered bedrock zone** or sub-outcrop horizon. Drilling in the study area indicated the presence of significant scree deposits, which are restricted to the lower lying areas.

Yields in this aquifer are generally low (less than 0.5 l/s) and the aquifer is usually not fit for supplying groundwater on a sustainable basis. Consideration of the shallow aquifer system becomes important during seepage estimations from pollution sources to receiving groundwater and surface water systems. The shallow weathered zone aquifer plays the most important role in mass transport simulations from process and mine induced contamination sources because the lateral seepage component in the shallow weathered aquifer often dominates the flow. According to the Parsons Classification system, this aquifer is usually regarded as a minor- and in some cases a non-aquifer system.

The second, main aquifer system is the deeper secondary fractured rock aquifer where groundwater yields, although more heterogeneous, can be higher. This aquifer system usually displays semi-confined or confined characteristics with piezometric heads often significantly higher than the water-bearing fracture position. Fractures may occur in any of the co-existing host rocks due to different tectonic, structural and genetic processes. Drilling results indicated an absence of significant water yielding fractures within the secondary fractured rock aquifer. Little is thus known of the secondary aquifer, and at best, only assumptions can be made based on experience from similar iron ore mining environments. According to the Parsons Classification system, the aquifer could be regarded as a minor aquifer system, but also a sole aquifer system in some cases where groundwater is the only source of domestic water.

Notable is the fact that **no significant blow yields** were recorded in the secondary fractured rock aquifer. Dolomite was mainly targeted during the drilling of the water supply boreholes, which is a rock type capable of hosting major aquifers. No significant water yielding fractures or solution cavities were intersected during the drilling of eleven boreholes for water supply to the proposed mining activities.

In spite of relatively low blow-out yields, pump tests were performed on a number of monitoring and water supply boreholes in order to obtain a good distribution of aquifer parameters throughout the project area. These pump tests were performed using a low yield ( $\pm$  0.3 l/s) pump with the main aim of determining the transmissivity and storage characteristics of the solid geological formation – the so-called aquifer matrix.

These low rate pump tests are performed instead of the more commonly used slug tests because of the much improved accuracy obtained with the pump tests, resulting in much more reliable aquifer parameters calculated from the tests.



Table 30: Parsons Aquifer Classification (Parsons, 1995)

Sole	An aquifer that is used to supply 50% or more of domestic water for a given area, and for which
Aquifer	there is no reasonably available alternative sources should the aquifer be impacted upon or
System	depleted. Aquifer yields and natural water quality are immaterial.
Major	Highly permeable formation, usually with a known or probable presence of significant fracturing.
Aquifer	They may be highly productive and able to support large abstractions for public supply and other
System	purposes. Water quality is generally very good (Less than 150 mS/m).
Minor Aquifer System	These can be fractured or potentially fractured rocks that do not have a primary permeability, or other formations of variable permeability. Aquifer extent may be limited and water quality variable. Although these aquifers seldom produce large volumes of water, they are important both for local suppliers and in supplying base flow for rivers.
Non- Aquifer System	These are formations with negligible permeability that are generally regarded as not containing groundwater in exploitable quantities. Water quality may also be such that it renders the aquifer unusable. However, groundwater flow through such rocks, although impermeable, does take place, and needs to be considered when assessing the risk associated with persistent pollutants.
Special Aquifer System	An aquifer designated as such by the Minister of Water Affairs, after due process.

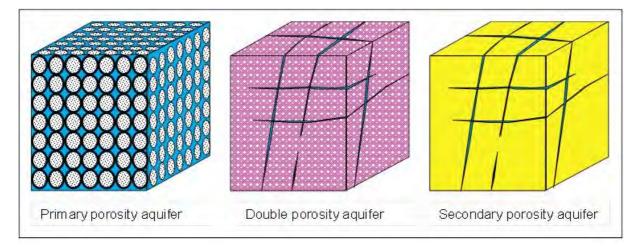


Figure 64: Types of aquifers based on porosity

Geomean – Geometric mean, Harmean – Harmonic mean.

# 3.10.6 Groundwater Quality Evaluation

The groundwater quality data were collected from two sources, namely the analyses of groundwater samples collected from **hydrocensus boreholes** and newly drilled groundwater **monitoring and water supply boreholes**.

Groundwater quality data were evaluated with the aid of diagnostic chemical diagrams and by comparing the inorganic concentrations to the South African National Standards for drinking water (Table 31).



Table 31: South African National Standards for drinking water (SANS 241:2011)

Determinant	Risk	Unit	Standard limits				
Physical	and aesthetic det						
Free chlorine	Chronic health	mg/L	≤ 5				
Monochloramine	Chronic health	mg/L	≤ 3				
Colour	Aesthetic	mg/L Pt-Co	≤ 15				
Conductivity at 25 ℃	Aesthetic	mS/m	≤ 170				
Odour or taste	Aesthetic	-	Inoffensive				
Total dissolved solids	Aesthetic	mg/L	≤ 1 200				
Turbidity	Operational	NTU	≤ 1				
Turbidity	Aesthetic	NTU	≤ 5				
pH at 25 C	Operational	pH units	≥ 5 to ≤ 9.7				
Chemical det	terminants - macro	-determinants	3				
Nitrate as N	Acute health – 1	mg/L	≤ 11				
Nitrite as N	Acute health – 1	mg/L	≤ 0.9				
Culfata as CO 2-	Acute health – 1	mg/L	≤ 500				
Sulfate as SO <sub>4</sub> <sup>2-</sup>	Aesthetic	mg/L	≤ 250				
Fluoride as F-	Chronic health	mg/L	≤ 1.5				
Ammonia as N	Aesthetic	mg/L	≤ 1.5				
Chloride as Cl <sup>-</sup>	Aesthetic	mg/L	≤ 300				
Sodium as Na	Aesthetic	mg/L	≤ 200				
Zinc as Zn	Aesthetic	mg/L	≤ 5				
Chemical determinants - micro-determinants							
Aluminium as Al	Operational	μg/L	≤ 300				
Antimony as Sb	Chronic health	μg/L	≤ 20				
Arsenic as	Chronic health	μg/L	≤ 10				
Cadmium as Cd	Chronic health	μg/L	≤ 3				
Total chromium as Cr	Chronic health	μg/L	≤ 50				
Cobalt as Co	Chronic health	μg/L	≤ 500				
Copper as Cu	Chronic health	μg/L	≤ 2 000				
Cyanide (recoverable) as CN <sup>-</sup>	Acute health – 1	μg/L	≤ 70				
lucio de Es	Chronic health	μg/L	≤ 2 000				
Iron as Fe	Aesthetic	μg/L	≤ 300				
Lead as Pb	Chronic health	μg/L	≤ 10				
Managara	Chronic health	μg/L	≤ 500				
Manganese as Mn	Aesthetic	μg/L	≤ 100				
Mercury as Hg	Chronic health	μg/L	≤ 6				
Nickel as Ni	Chronic health	μg/L	≤ 70				
Selenium as Se	Chronic health	μg/L	≤ 10				
Uranium as U	Chronic health	μg/L	≤ 15				
Vanadium as V	Chronic health	μg/L	≤ 200				



## 3.10.6.1 Site Specific Groundwater Quality Evaluation

Site specific groundwater quality information was obtained from eight newly drilled groundwater monitoring and water supply boreholes (Figure 65). The monitoring boreholes were sited mainly down gradient from potential sources of groundwater contamination, whereas geological structures such as dykes and faults were targeted by the water supply boreholes.

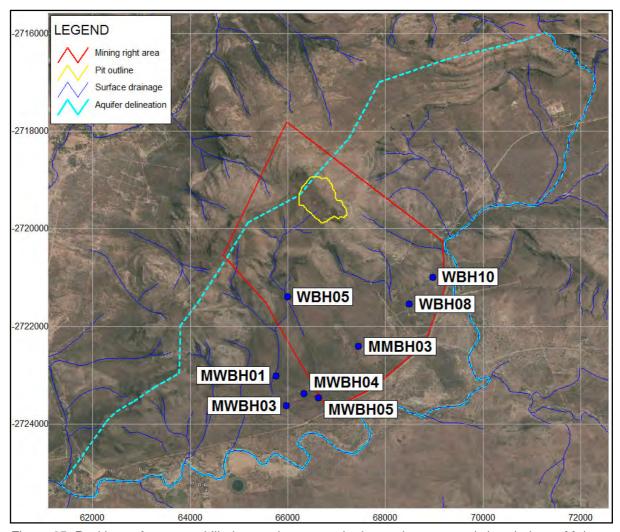


Figure 65: Positions of purpose drilled groundwater monitoring and water supply boreholes at Meletse

Groundwater **TDS** concentrations measured in the monitoring and water supply boreholes vary between  $\pm$  150 mg/l and 500 mg/l, which are below the permissible SANS value of 1 200 mg/l.

The **sulphate** content of groundwater within the immediate vicinity of the planned mining activities is well below the permissible SANS concentration of 500 mg/l with concentrations varying from less than 0.04 mg/l to approximately 20 mg/l.

Groundwater **pH** conditions are relatively neutral with values varying between  $\pm$  7.7 and 8.2 units. As a result of the neutral pH conditions, the groundwater **iron** content is exceptionally low (Table 32).



The groundwater **nitrate** content is exceptionally low, which is to be expected under natural/unaffected groundwater quality conditions (Table 32).

Groundwater **chloride** concentrations vary from less than 10 mg/l to approximately 150 mg/l, which are well below the permissible SANS concentration of 300 mg/l.

The groundwater **fluoride** concentrations of  $\pm$  2.2 mg/l and 6.0 mg/l were measured in boreholes WBH08 and MWBH05 respectively, hence exceeding the permissible SANS concentration of 1.5 mg/l.

Groundwater **manganese** concentrations of  $\pm$  1.4 mg/l and 1.6 mg/l were measured in boreholes MMBH03 and WBH08 respectively, hence exceeding the permissible SANS value of 0.5 mg/l. Only sensitive users are expected to be affected at these concentrations, however taste and colour impairments may be noticed at concentrations as low as 0.1 mg/l.

According to Figure 66 and Figure 67 the site specific groundwater chemistry is mainly spread through fields 1 and 2 of the Expanded Durov diagram, which generally represent fresh, recently recharged groundwater. As the groundwater moves from field 1 through to 3 the degree of ion exchange increases until the groundwater is dominated by sodium cations. The groundwater anion component is dominated by bicarbonate alkalinity, which suggests good groundwater quality conditions.

# Summary:

- An overall domination in bicarbonate alkalinity suggests the absence of pyrite oxidation within the immediate vicinity of the project area;
- The baseline groundwater quality on site is good and water from the majority of boreholes is suitable for human consumption (SANS241:2011);
- The groundwater manganese content measured in boreholes MMBH03 and WBH08 exceeds the
  permissible SANS value of 0.5 mg/l. Only sensitive users are expected to be affected at these
  concentrations, however taste and colour impairments may be noticed at concentrations as low as
  0.1 mg/l; and
- Fluoride concentrations measured in boreholes WBH08 and MWBH05 exceed the permissible SANS concentration of 1.5 mg/l.



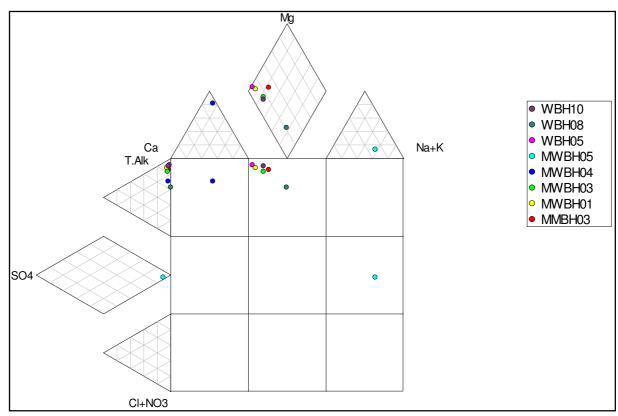


Figure 66: Expanded Durov diagram of site specific groundwater chemistries for Meletse

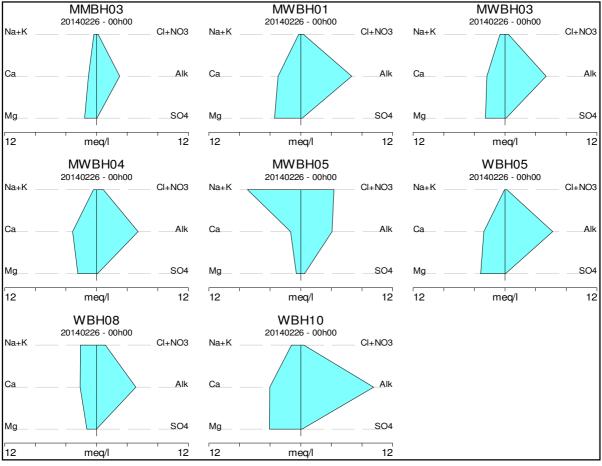


Figure 67: Stiff diagrams of site specific water chemistries for Meletse



Table 32: Concentrations of indicator chemical parameters of site specific boreholes for Meletse (mg/l)

ВН	m LI	EC	TDS	Ca	Mg	Na	K	CI	SO4	NO3-N	F	Al	Fe	Mn	THardness
БП	рН	mS/m	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MMBH03	8.0	26.4	152.0	21.1	19.0	6.7	2.3	6.8	2.8	0.2	0.5	<0.006	<0.006	1.4	131.0
MWBH01	8.1	61.9	334.0	59.5	41.7	4.5	2.5	11.3	9.7	0.2	1.0	<0.006	<0.006	0.3	320.0
MWBH03	8.1	53.9	283.0	47.4	31.0	13.3	3.2	13.8	6.8	0.6	0.5	<0.006	<0.006	<0.001	246.0
MWBH04	8.0	58.1	307.0	62.5	29.6	8.1	2.0	30.3	5.9	0.4	1.2	<0.006	<0.006	<0.001	278.0
MWBH05	8.0	93.9	504.0	26.8	7.2	158.0	3.7	153.0	23.6	0.2	6.0	<0.006	<0.006	<0.001	97.0
WBH05	7.9	55.6	299.0	55.3	38.8	0.5	1.6	7.9	3.0	0.3	0.2	<0.006	<0.006	<0.001	298.0
WBH08	7.7	61.1	314.0	43.1	15.3	45.8	4.4	41.0	<0.04	0.3	2.2	<0.006	1.5	1.6	171.0
WBH10	8.2	83.4	474.0	81.2	49.7	26.4	2.0	13.2	8.4	0.4	1.1	<0.006	<0.006	<0.001	408.0

Note: Values shaded with red are those exceeding the permissible SANS concentrations for drinking water purposes.

# 3.11 Protected areas and conservation planning

As per information obtained from the Waterberg District Environmental Management Framework Final Report, Waterberg is the first region in the northern part of South Africa to be named as a Biosphere Reserve by UNESCO (formal status was gained in 2001). Tourism is the major source of income within the Biosphere Reserve. Cattle ranching, crop production and game farming is also practiced in the area.

The Waterberg Biosphere Reserve Committee was set up after a five year consultation process with all stakeholders concerned, with the aim of achieve a balance between the pressures of tourism, the need to generate benefits to the local communities and the conservation of the natural environment. Biosphere reserves are organised into the following three interrelated zones:

- The core area:
- The buffer zone; and
- Transition area.

There are also 11 Environmental Management Zones that form part of the Waterberg Biosphere Reserve:

- Zone 1: Protection of natural vegetation, scenic landscape and rock painting areas, with limited appropriate tourism;
- Zone 2: Nature and cultural tourism focus areas within a high quality natural setting;
- Zone 3: Game and cattle farming (including hunting) areas with commercial focus;
- Zone 4: Mining focus areas;
- Zone 5: Potential large industrial and related activities focus area;
- Zone 6: Restricted mining focus areas in aesthetic and/or ecological resource areas;
- Zone 7: Urbanisation focus areas and nodes:
- Zone 8: Rural settlement areas:
- Zone 9: Agriculture focus areas with a tourism component;
- Zone 10: Agriculture areas with commercial focus; and
- Zone 11: Major infrastructure corridors.

Shangoni Management Services obtained the relevant GIS files and pdf documents to plot the location of the Meletse Iron Ore Project site (and associated contravened site in terms of the unlawful construction of the roads) onto the Waterberg Biosphere maps as obtained from the Waterberg Biosphere Reserve website (http://www.waterbergbiosphere.org/Management+Plan+Maps.html). The contravened site lies within the "Buffer" and "Transition 1" Biosphere Zones (see Figure 68 below) and the "Zone 1" and "Zone 2" Environmental Management Zone(s) of the Biosphere (see Figure 69 below). According to the Waterberg Biosphere Reserve website

(http://www.waterbergbiosphere.org/Management+Plan+Maps.html), it is proposed to expand the core zones of the Biosphere Reserve. The maps given on the above listed website for the Potential Future Core Zones show that the core zone will be expanded to the east of current core zones and not to the



south, were the core zones could potentially extend into the contravened site that forms part of this S24G application.

#### **Biosphere Zones**

According to UNESCO only the core area requires legal protection. Therefore, such areas usually correspond to existing protected areas (e.g. nature reserves or national parks).

The core areas of the Waterberg Biosphere Reserve fall within Zone 1 of the Environmental Management Zones.

The buffer zones (adjacent or surrounding the core zones) fall mostly in Environmental Management Zone (EMZ) 1 but also partly in other Zones. With reference to the Environmental Management Framework Report, the buffer zone should be used for activities compatible with sound ecological practices, including environmental education, recreation, ecotourism and applied basic research. These buffer areas also form important links between the core areas and are representative of areas that are still in a natural or near natural state (Waterberg Environmental Management Framework – Final Report). Only activities compatible with the conservation objectives of the Waterberg Biosphere Reserve should occur within the Buffer Zone. Such activities include, for example, National Parks, Nature Reserves, World Heritage Sites, walking trails, facility based recreational activities, cycling, hunting and tourist-orientated facilities (e.g. curio shops) (Contour and Associates, 2011).

A flexible transition area is defined in terms of the biosphere as areas that may contain a variety of agricultural activities, settlements and other uses and in which local communities, management agencies, scientists, non-governmental organisations, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources. The transition zone has been divided into two sub-zones for the Waterberg Biosphere Reserve. This is to distinguish the areas of high impact from the areas of low impact. Transition Zone 1 allows for a higher level of tourism development, but still retains the overall undisturbed natural character of the area. This transition zone corresponds with EMZ 1 and EMZ 2 (Waterberg Environmental Management Framework – Final Report). Land uses within Transition Zone 1 can, for example, include nature-based game ranching, pastures, eco-tourism and cattle grazing. Emphasis should be placed on the protection of the Waterberg's ecology and character (Contour and Associates, 2011). Transition Zone 2 provides for more intensive cultivation, agro-industries, human settlements and support services to the agricultural and tourism industries.



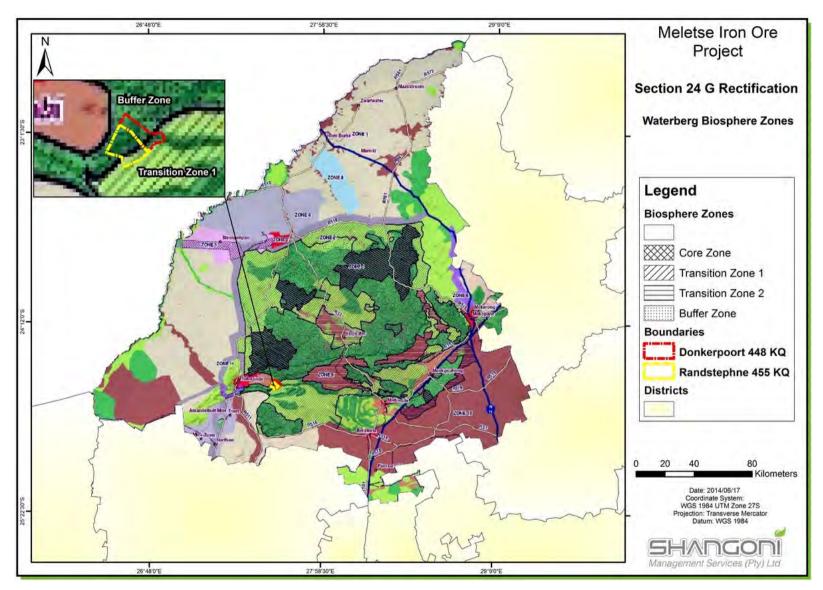


Figure 68: The contravened site overlain on the Waterberg Biosphere Zones Map (Waterberg District Environmental Management Framework Report)



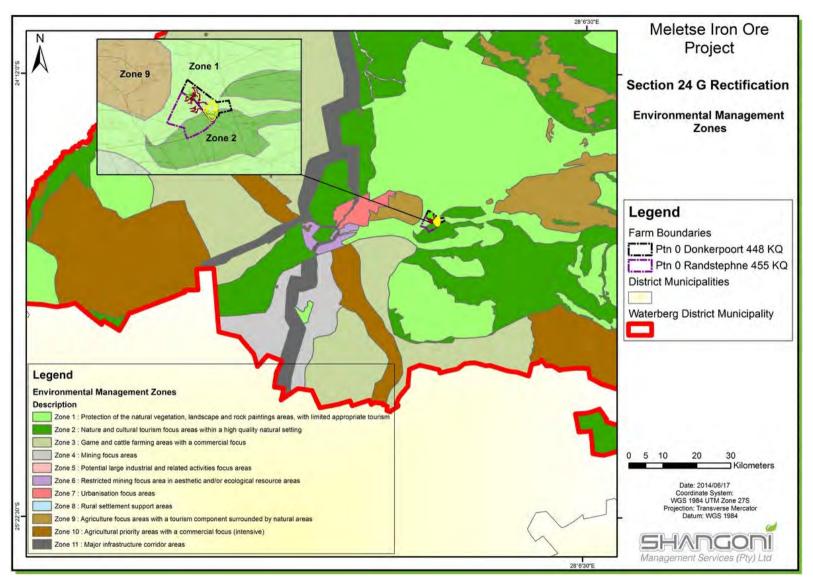


Figure 69: The contravened site overlain onto the Environmental Management Zones of the Waterberg District



## **Environmental Management Zones**

Zone 1 is described as an area where the protection of the natural vegetation, landscape and rock paintings areas should take place, with limited and appropriate tourism. These core areas include formally protected areas such as:

- Nylsvley Nature Reserve;
- Marakele National Park;
- Marakele Contractual Park:
- · Mokholo Dam Nature Reserve and incorporated land; and
- Masebe Nature Reserve.

The following desired state for this Zone is described in the EMF Report as follows:

- Water extraction from the natural system in this zone should be kept to an absolute minimum.
   Preservation of the water systems in the most natural state is desired.
- Water quality should be kept as clean and natural as possible to prevent ecological damage and to
  ensure that the quality of the water is maintained for downstream use. Implementation of legislation,
  compliance monitoring and enforcement should be a high priority in this zone.
- Conservation is the priority land-use in this zone and should be promoted as the core activity in every instance.
- Limited, low impact tourism facilities may be allowed in this zone provided that it does not have a negative impact on the conservation priority. Existing tourism facilities that do not comply to this zone may continue, provided that such activities are not expanded.
- Agriculture is not desired in this zone. Existing agricultural activities may continue provided that such activities are not expanded.
- Game and cattle farming in this area must conform to the conservation requirements for this zone including the carrying capacity and the suitability of game species.
- Business and retail is not desired in this zone and should be limited to existing facilities.
- Service infrastructure should be limited to what is necessary but should nonetheless be of a good quality. Roads should be kept to the minimum standard necessary but should be well maintained and safe to use. The maintenance of certain key existing roads as scenic routes should be encouraged.
- Solid waste disposal is not desired in this zone.
- The disposal of any untreated sewage in this zone where there is a concentration of people in facilities such as lodges should not be allowed.
- Employment in the area should focus on conservation and related employment opportunities.
- Housing is not desired in this zone except for Vaalwater where as many as possible employees in the area should be accommodated.

The following un-desired activities for Zone 1 are listed in the EMF Report:

- Mining;
- Industries;



- Energy generation plants;
- Urbanisation and residential settlement;
- Golf courses and golf estates;
- Additional surfaced roads:
- Airfields and landing strips (with reference GN No. R. 564 of 18 June 2010);
- Commercial buildings for use by the public of any sort;
- Industrial facilities; and
- Filling stations.

Zone 2 relates to nature and cultural tourism focus areas within a high natural, visual and cultural setting that has significant potential for the development of nature and / or culture based tourism. It also forms the area from which the conservation use in Zone 1 can be explored.

The following desired state for this Zone is described in the EMF Report as follows:

- Water quality in this zone should not be allowed to deteriorate. Legislation to protect water quality and prevent pollution should be strictly enforced and policed.
- Water extraction from the natural system in this zone should be kept to an absolute minimum.
- Conservation is the secondary focus of this zone. As such, conservation legislation should be observed and enforced. Conservation areas should be well maintained to encourage further tourism to the zone.
- Tourism within a conservation/natural setting should be the focus of activities and development in this zone. Sufficient facilities to accommodate tourists, at various levels, from basic to luxurious should be invested in.
- Agriculture is not desired in this zone. Existing agricultural activities may continue provided that such activities are not expanded.
- Game and cattle farming in this zone should not detract from the tourism experience of the zone.
- Large scale commercial business and retail is not desired in this zone. Instead, business that would promote and enhance tourism is desired. Such business could include curio shops, restaurants etc.
- Service infrastructure should be limited to what is necessary but should nonetheless be of a good quality. Roads should be kept to the minimum standard necessary but should be well maintained and safe to use. The maintenance of certain key existing roads as scenic routes should be encouraged.
- Solid waste disposal is not desired in this zone. A programme should be established to deliver presorted solid waste generated in this area to designated depots from where reuse, recycling and composting can be implemented.
- The disposal of any untreated sewage in this zone where there is a concentration of people in facilities such as lodges should not be allowed.



- Employment in the zone should be focused mainly in the tourism, hospitality and conservation sectors. Skills training programmes supported by the government and private sector is strongly desired.
- Housing should be limited to what is necessary in this zone. Housing in this zone should accommodate those employed at the tourism facilities and conservation areas.

The following un-desired activities for Zone 2 are listed in the EMF Report:

- Mining;
- Industries;
- Energy generation plants with the exception of those that provide carbon free energy to the local area on disturbed areas in a manner that does not have a negative impact on the sense of place of the area, being particularly sensitive to not breaking the skyline or impeding on views;
- Urbanisation and dense residential settlement; and
- Golf courses and golf estates.

Environmental Management Zone 4 of the EMF relates specifically to Mining Focus Areas. This zone represents areas where significant mineral resources of strategic national importance occur within largely natural environments. The mining of minerals is listed as one of the preferred activities in this zone (Waterberg Environmental Management Framework – Final Report).

#### **Conservation Plan: Critical Biodiversity Areas**

Based on the Limpopo Conservation Plan (v2) Technical Report (EDET/2216/2012), dated September 2013, 40% of the Limpopo Province is identified as Critical Biodiversity Areas (CBA).

Critical Biodiversity Areas (CBAs) within the bioregion are the portfolio of sites that are required to meet the region's biodiversity targets, and need to be maintained in the appropriate condition for their category. A map of CBAs for Limpopo was produced as part of the Conservation Plan and sites were assigned to CBA categories based on their biodiversity characteristics, spatial configuration and requirement for meeting targets for both biodiversity pattern and ecological processes (http://bgis.sanbi.org/limpopo/CBAs.asp).

These CBAs have been divided into CBA 1 and CBA 2 on the basis of the underlying characteristics of the biodiversity features which are being protected (i.e. location fixed features such as sites for Critically Endangered (CR) species and flexible ones such as Least Cost Corridors)

The Critical Biodiversity areas are linked to land-use guidelines, which are aimed at informing strategic decision making and facilitation biodiversity conservation.



The majority of the CBAs in the Limpopo Province are CBA 1 (22 %), which can be considered "irreplaceable" in that there is little choice in terms of areas available to meet targets. If CBA 1 areas are not maintained in a natural state then targets cannot be achieved. CBA 2 areas (18%) are considered "optimal" as there is significant design involved in their identification. CBA 2's represent areas where there are spatial options for achieving targets and the selected sites are the ones that best achieve targets within the landscape design objectives of the plan.

An additional 23% of the province is categorised as Ecological Support Area (ESA). This category has also been divided on the basis of land-cover into ESA 1 (16%) and ESA 2 (7%), with ESA 1 being in a largely natural state while ESA 2 areas are no longer intact but potentially retain significant importance from a process perspective (e.g. maintaining landscape connectivity). Other "Natural Areas" make up 20% of the Limpopo Province and just over 11% is designated as formal Protected Area.

As depicted in Figure 70 below, the contravened site falls within a CBA 1 area.

The following land management objectives and recommendations have been identified for CBA 1 areas (as per the Limpopo Conservation Plan):

- Maintain in a natural state with limited or no biodiversity loss,
- Rehabilitate degraded areas to a natural or near natural state, and manage for no further degradation,
- · Obtain formal conservation protection, where possible, and
- Implement appropriate zoning to avoid net loss of intact habitat or intensification of land use.

The following compatible land uses have been identified for CBA 1 areas (as per the Limpopo Conservation Plan):

- Conservation and associated activities,
- Extensive game farming and eco-tourism operations with strict control on environmental impacts and carrying capacities, where overall there is a net biodiversity gain,
- Extensive livestock production with strict control one environmental impacts and carrying capacities,
- Required support infrastructure for the above activities, and
- Urban open space systems.

The following incompatible land uses have been identified for CBA 1 areas (as per the Limpopo Conservation Plan):

- Urban land-uses, including residential (including golf estates, rural residential, resorts),
- Business.
- Mining and industrial,
- Infrastructure (roads, power lines, pipelines),



- Intensive animal production (all types including dairy farming associated with confinement, imported foodstuffs, and improved / irrigated pastures),
- Arable Agriculture (forestry, dry land and irrigated cropping), and
- Small holdings.



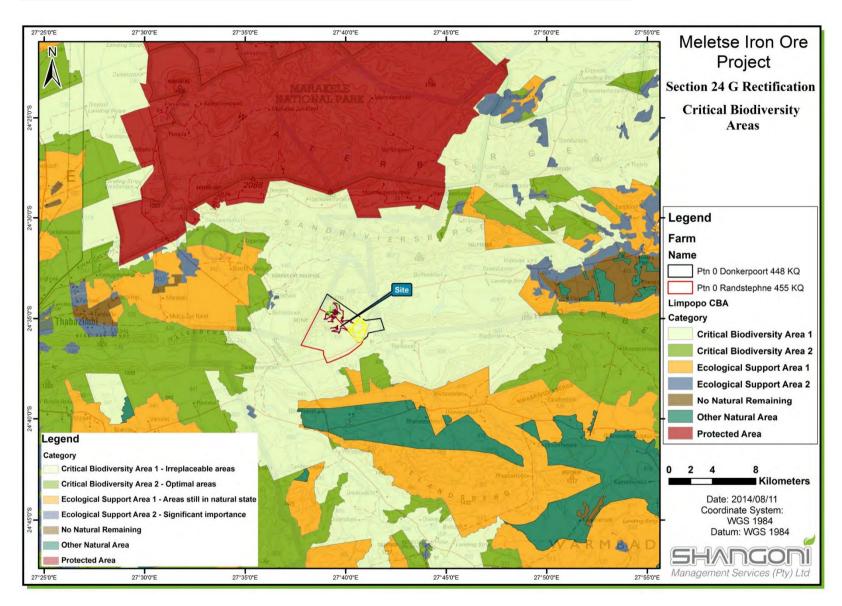


Figure 70: The contravened site overlain onto the Limpopo Conservation Plan: Critical Biodiversity Areas



# 3.12 Cultural Heritage

# 3.12.1 Palaeontological Heritage

The following information was extracted from: Almond, J.E. March 2014. Palaeontological assessment: combined desktop & site visit report proposed Meletse Iron Ore Project on remaining extent of the farms Donkerpoort 448KQ and Randstephane 455KQ near Thabazimbi, Waterberg district, Limpopo province. The report is available in Appendix F3.

This section reviews the fossil heritage reported from the main sedimentary rock units that are represented within the contravened area. Igneous rock units such as the Bushveld Complex and various diabase intrusions do not contain any fossils and are therefore not considered further here.

#### 3.12.1.1 Fossils in the Malmani Subgroup

The Malmani Subgroup platform carbonates of the Transvaal Basin host a variety of stromatolites (microbial laminites), ranging from supratidal mats to intertidal columns and large subtidal domes. These biogenic structures are of biostratigraphic as well as palaeoecological interest; for example, the successive Malmani dolomite formations are in part differentiated by their stromatolite biotas (Eriksson et al. 2006). There is an extensive literature dealing with the Malmani stromatolites, including articles by Button (1973), Truswell and Eriksson (1972, 1973, and 1975), Eriksson and MacGregor (1981), Eriksson and Altermann (1998), Sumner (2000), Schopf (2006), among others. Microbial filaments and unicells have been reported from stromatolites of the Transvaal Supergroup (Eriksson & MacGregor 1981, MacGregor 2002 and refs. therein). Short accounts of stromatolites associated with Transvaal dolomite exposures in the Cradle of Humankind World Heritage Site, including the Makapansgat Valley, Limpopo, have been given by MacGregor (2002) and Maguire (1998). Finely-laminated Malmani dolomites are exposed both within and in the immediate vicinity of Gatkop Cave. The lamination may well be of microbial origin. No examples of domical or columnar stromatolites were observed here. In general, exposure levels of Malmani dolomites within the Meletse Iron Ore Project study area appear to be low due to extensive colluvial, soil and vegetation cover. There remains a possibility that wellpreserved stromatolites are represented here, at or near-surface, but this can only be determined through fieldwork and excavation.

### 3.12.1.2. Fossils in the Penge Formation

Macrofossils have not been reported from banded ironstones of the Penge Formation such as outcrops along the crest of the Gatkop – Meletse range and that are the target of current ore prospecting activities there. It is of note that biological mediation of banded ironstone deposition has been proposed by some authors. Possible fossilised microbes, including tantalizing "siliceous nano-cucumber structures", have been reported from BIF facies in the Transvaal Supergroup of the Northern Cape and elsewhere (Klemm 1979, Hälbich *et al.* 1993).



#### 3.12.1.3. Fossils in the Pretoria Group

Stromatolites have been recorded from several subunits within the Pretoria Group including lacustrine facies of the Timeball Hill Formation, marine facies in the Daspoort Formation (especially in the eastern outcrop area) and Silverton Formation, as well as the mudrock-dominated Vermont Formation (Button 1971, Catuneanu & Eriksson 2002, Eriksson *et al.* 2006). Pretoria Group subunits with stromatolites probably also contain organic-walled microfossils. This may well also apply to carbonaceous mudrocks. Microbial mat structures (desiccated mats sometimes resemble trace fossils) are known from paralic sandstones of the Magaliesberg Formation.

# 3.12.1.4 Fossils in the Waterberg Group

The Early Proterozoic Waterberg Group and Soutpansberg Group "red bed" successions of southern Africa are of considerable palaeobiological and palaeoenvironmental significance in that they provide key evidence for the development of an oxygenated atmosphere on Earth after *c.* 2 billion years ago. Some of the earliest known (1.8 Ga) terrestrial cyanobacterial mats have been recorded from playa lake deposits of the Makgabeng Formation within the Waterberg Group outcrop area on the Makgabeng Plateau, west of Soutpansberg, Limpopo Province (Eriksson *et al.* 2000, Eriksson *et al.* 2008). The Makgabeng Formation does not occur within the present study area and the palaeontological sensitivity of the Waterberg braided fluvial rocks seen here is rated as low.

#### 3.12.1.5 Fossil in the Late Caenozoic superficial sediments

The fossil record of most Late Caenozoic superficial sediments or "drift" deposits in the subcontinental interior have been comparatively neglected in palaeontological terms. The palaeontological sensitivity of these geologically youthful deposits is generally low. However, they may occasionally contain important fossil biotas, notably the bones, teeth and horn cores of mammals as well as remains of reptiles like tortoises. Good examples are the Pleistocene mammal faunas from alluvial and pan sediments in the Free State and elsewhere (Wells & Cooke 1942, Cooke 1974, Skead 1980, Klein 1984, Brink, J.S. 1987, Bousman *et al.* 1988, Bender & Brink 1992, Brink *et al.* 1995, MacRae 1999, Meadows & Watkeys 1999, Churchill *et al.* 2000, Partridge & Scott 2000, Brink & Rossouw 2000, Rossouw 2006). Other late Caenozoic fossil biotas from these superficial deposits include non-marine molluscs (bivalves, gastropods), ostrich egg shells, tortoise remains, trace fossils (*e.g.* calcretised termitaria, coprolites, invertebrate burrows), and plant material such as peats or palynomorphs (pollens) in organic-rich alluvial horizons (Scott 2000) and diatoms in pan sediments. In Quaternary deposits, fossil remains may be associated with human artefacts such as stone tools and are also of archaeological interest.

#### 3.12.1.6. Fossils in Late Caenozoic cave deposits

In accordance with the brief for the earlier palaeontological site visit to Gatkop Cave, attention focused mainly, but not exclusively, on breccias within the cave infill (Almond 2012). Some of these deposits, by analogy with breccias in dolomite caves in the Cradle of Humankind and Makapansgat Valley for example, might be bone-bearing and thus of considerable palaeontological interest. Within the



fossiliferous breccias the bone clasts may appear variously white, or secondarily reddened by ferric compounds, or even stained black by manganese minerals. The biostratigraphy and taxonomy of the rich Late Pliocene to Pleistocene mammalian faunas, including micromammal and hominin remains, that have been recorded from dolomite cave infills in the South African interior have been reviewed by authors such as Brain (1981), Klein (1984), McKee *et al.* (1995), Maguire (1998), Partridge (2000), Tobias (2000), and Avery (2000). Accessible, well-illustrated accounts of these fossil assemblages are provided by MacRae (1999) as well as Hilton-Barber and Berger (2004). Caves such as Sterkfontein have in addition yielded well-preserved fossil plant remains, including petrified (calcified) woods, pollens and spores (Bamford *in* Bonner *et al.* 2007, pp. 91-101).

Very useful accounts of the accumulation of fossiliferous cave breccias and cave taphonomy within a southern African context have been provided by Brain (1981), Maguire *et al.* (1980) and Partridge (2000), among others. These authors emphasize the important role played by carnivores, such as hyaenas, leopards and owls, in mammal bone accumulation within caves. Passive introduction of skeletal remains into caves through open shafts acting as fossil traps as well as the redistribution of bones within the cave system by gravity and water flow also played important roles.

It should be noted that not all breccias associated with dolomite caves are fossiliferous. Breccias may owe their origins variously to (1) energetic sedimentary processes in the original depositional basin (*e.g.* debris flows), (2) episodes of palaeokarst formation during Precambrian times, (3) fracturing of host rocks along major fault planes (as seen, for example, at Gatkop), as well as (4) deposition during the early to late phases of cave formation and subsequent cave infilling (*e.g.* roof-fall or collapse breccias, talus and debris cone breccias, or breccias formed by secondary reworking of debris cone material). Fossil-bearing breccias often contain extraneous (*i.e.* extra-cave) material such as soil, cave earth and gravels in addition to dolomitic and chert debris. In the present case, this extraneous material might include occasional gravel clasts of banded ironstone and reddish, ferruginous soils that typify the area. During the author's 2011 site visit, attention therefore focused on breccia horizons or lenses that do not consist exclusively of dolomitic and cherty debris. None of the breccia bodies inspected, including those containing an extraneous component such as reddish-hued cave earth, appear to contain recognisable macrofossil remains, however (Almond 2012).



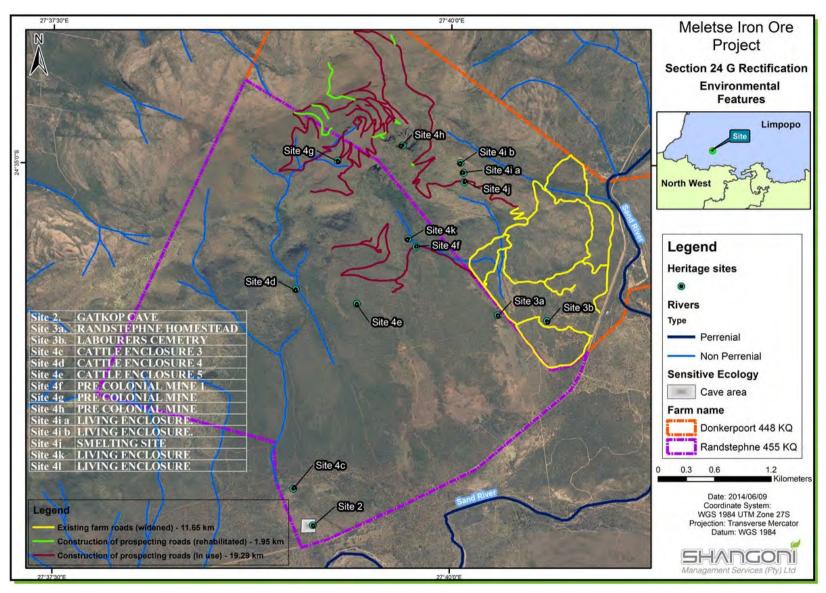


Figure 71. Sites of archaeological and cultural interest



# 3.12.2 Sites of archaeological and cultural interest

The following information was obtained from: African Heritage Consultants CC. May 2014. 1st Phase Cultural Heritage Impact Assessment for the farms Donkerpoort 448 KQ, Randstephne 455 KQ and Waterval 443 KQ, Thabazimbi, Limpopo province. The report is availabe in Appendix F4

Also refer to Figure 71 that shows the concentrations of heritage resources on the farms that were assessed.

The site is located in the warm Waterberg Bushveld where several different veldt types intersect. From writers such as Moffat and others it is understood that the region was harsh to live in, especially during summers, and under the constant threat of Malaria, and the Tsetse fly. Game abounded here in the past, and the vegetation yielded sufficient sources for gatherers, and then more.

It appears to have been a place that both attracted and repelled the settlement of people through time, but the region had another aspect to consider, namely its minerals. These have been exploited since early times, and throughout time to the present day, where especially iron is one of the most treasured resources.

For the South African Iron Age people that have apparently been active in the region since the eighth century A.D, the iron was used for the manufacturing of implements and weapons that assisted them in farming, hunting, war and as bridal procurement. It also formed part of an intertribal tax system.

Because of the above it is generally known that Stone Age people, as well as Iron Age people utilised the region throughout the centuries before white hunters exterminated the Buffalo that carried the dreaded Tsetse fly. Changes in climate, to a large extent, eliminated the occurrence of malaria.

The Stone age in the region is represented through a sprinkling of stone artefacts throughout the area, and fixed sites such as Mokopaan that represents nearly the full range of the 'Homo specie's' development. In the general Waterberg region, the Stone Age is furthermore represented by a large number of shelters that acted as semi-permanent dwellings for the more recent Stone Age peoples and also retains rock-art that formed part of their religious lives.

Similarly the early black farmers are well represented from 600 A.D. to 1800 A.D. Even that being said, it generally appears that, even during that period; the area has been relatively sparsely populated. One may attribute this to the climate (summer) conditions of the area.

The same was true for the later settlement of European Farmers. In the late nineteenth century the area was used as a winter hunting ground by people of all walks of life, even including Paul Kruger, President of the then Z.A.R. It was only with the advent of the 'discovery' of the massive iron ore body of Thabazimbi in the 1920's that farms were first occupied by white settlers. The large scale iron ore



mining today only commenced in the mid nineteen thirties, with the workforce of one mine manager, Mr Jourdaan and approximately 20 black labourers.

Features from some of the possible periods mentioned above were located during the assessment, including a site of high religious context for ancestral worshippers from the region.

**Site 1.** The grave of one J.H.T.O. PERREIRA is located on the banks of the Sondagsrivier close to the bridge. On the 1: 50 000 map 2427DA SANDRIVIERSPOORT the abbreviation 'R' represents a watering point (possibly an old 'drif' and 'uitspanning'<sup>14</sup>) on the 'old road'. The inscriptions on his headstone gives the following information:- born in 1881 being a 'Burger'<sup>15</sup> of the Z.A.R., occupation as 'KRUITMAKER<sup>16</sup>' and cause of death as 'VERMOOR' IN 1901. This is a rather interesting issue from the second South African War<sup>17</sup>, as it is one of the few links to that period of the history in Thabazimbi.

The site should be seen to be of high significance, and treated accordingly (This site is not located within the contravened site boundary).

This site not located within the mining right area.

**Site 2.** The second site is a dolomite cave that is still regularly visited for religious purposes. It is well defined by a sturdy game fence and is under supervision of one Thomas Mothloki<sup>18</sup>. This site must be treated with utmost care from a cultural point of view.

Secondly it is a dolomite cave, opening to daylight, and from the outside appears to be of significant size. It therefore may contain Breccia similar to that found at the Mokopaan Cave known as the Cave of Hearts.<sup>19</sup>

It is advised that a palaeontologist is asked to investigate this cave's potential (Refer previous dicussions).

The site should be seen to be of high significance and treated accordingly. No demolition can be considered (this site is not located within the mine boundary area).

Site 3a. The third site is the original Randstephne homestead. It contains classical 'South African Edwardian' features in the flanked front veranda where both flanking rooms support Cape Dutch

<sup>&</sup>lt;sup>19</sup> Although not presently a 'proclaimed site, under the National Heritage Act, Act 25 of 1999, this Act provides a blanket protection until otherwise proven. It at present legally protected under the Limpopo Environmental Act, Act no 7 of 2003.



<sup>&</sup>lt;sup>14</sup> Out –span. Place for animal drawn carriages to stop for rest and refreshment.

<sup>&</sup>lt;sup>15</sup> Citizen. Although this surname is of Portuguese origin, and not typical of 'White Pioneers' The influence of Portuguese traders on the old ZAR originated as early as 1845

 $<sup>^{\</sup>rm 16}$  Possibly freely translated as armourer, or 'one that fabricates ammunition'.

<sup>&</sup>lt;sup>17</sup> Better known as the second Anglo Boor War.

<sup>&</sup>lt;sup>18</sup> He is employed by Sandspruit Ranch Pty Ltd.

Gables. This building is one of few remaining in the region from this period as few were originally built, and of those most were lost in the processes of 'upgrading and modernization'.

A second phase recording is advised, and a 'preservation' plan must be put in place. This building and farmyard may be developed into site offices and/or accommodation for key personnel on the study area. SAHRA regulations must be adhered to.

This building is of high significance and should be treated as such. No demolition can be considered.

**Site 3b**. Closely associated with this homestead is the graveyard and former dwellings of the farm labourers that (one must assume), was the workforce of the dwelling on Randstephne. Owing to the physical nature of these dwellings they have long since disappeared, but the graves remain, and are obviously still tended to from time to time by relations.

The dwellings will not benefit with any further attention and need not to be protected.

The 13 (?) graves on the other hand are also protected under other laws apart from the National Heritage Act. These may be left in situ, and visiting rights may be negotiated with relations. Alternatively they may be exhumed and reburied in a formal burial site. The second alternative is advised, as the water reservoir and associated mining works close to the cemetery may create tension between the mine and the relatives of the deceased.

The graves are of high significance and should be treated as such. Relocation is advised.

**Site 4.** The rest of the sites are all related to the early nineteenth century Iron Age period<sup>20</sup> and has been treated as a collective. These include 'mines' (3?), 'smelting sites' (1), 'animal enclosures' (4?) and 'living areas' (2?). The 'group' is assumed to date from the stressful civil war period known as the Mfecane, or Defecane dating to the period of Mzilikazi, the renegade Zulu General that ruled most of the central and south 'Transvaal' circa1800 to 1845.

The sites are individually not rare, or of outstanding quality, they are not deemed to be particularly worthy of preservation on their own. But, the information that can be retrieved from these sites as a collective is of special importance, as it has not yet been done so in the past by archaeologists in the region.

<sup>&</sup>lt;sup>20</sup> Generally when societies are not under stress they tend to live on lower lying areas on relative flat terrain close to permanent water. When people, like in this instance, live several hundred meters above 'normal' levels of occupation it is an indicator of a serious threat to life and community.



It is suggested that a full second phase study is undertaken to record and possibly date the sites through the carbon fourteen dating process. After such recording it will be possible to acquire demolition permits for the individual sites.

Although the sites are individually of low significance, the collective is worthy of research. Only if such research is completed may demolition be considered.

**Site 5.** The last subjects are the weir and bridge over the Sondagsrivier, possibly dating to circa 1940 and 1960. Owing to 'progress' South Africa is fast losing these type of structures that had in fact opened the 'frontiers for 'development'

Although the two structures are individually of low significance, the collective is worthy elevating them to medium significance.

This site not located within the mining right area.

They have been included in this study for the possible event of the need of a new road to transport the iron ore.

The structures are of medium significance and, if possible, demolition should be avoided.

# 3.12.3 Cultural heritage of the Madimatla Cave and surrounding area: An Anthropological perspective

The following information was obtained from: Van Vuuren, C.J. May 2014. Cultural Heritage of the Madimatla cave and surrounding area: An anthropological perspective. The report is available in Appendix F16.

#### 3.12.3.1 The Ethno History of the area

Madimatla (aka Gatkop cave) is situated in a region which has been populated by Kgatla (Tswana) speaking people since the 1800s. The Kgatla earlier formed a branch of the Hurutshe Tswana and broke away from them around the present Zeerust (Van Zyl 1958:17, Ellenberger 1905:27) as cited by Reyneke (1971:27). This split came as a result of the military onslaught by the Tlokwa of Mantatisi in 1923. As a single entity the Kgatla later settled at Makapan, Hammanskraal at a place called Mabotse. The Bakgatla BagaMotsha appeared to be the senior ranked group. The BagaKgafela were the first to break away and they migrated in a north western direction along the Crocodile River and later settled around the present Rooiberg tin mine. The main four Kgatla branches are at present the Bakgatla BagaMakau near De Wilt, Bakgatla BagaMotsha of Marapjana (Schilpadfontein), the Bakgatla BagaKgafela and the Bakgatla BagaMosethla (Mosethla= earlier spelling) of Hammanskraal. Schapera



(1938, 1952) and Breutz 91953) provided more extended genealogies. The Kgatla of Kgafela has always been familiar with the mountainous region where Madimatla is located.

In a specific creation myth in Kgatla oral tradition it is related that the Kgatla tribes emerged from the Madimatla cave (Personal communication YM: 2014). The cave metaphor as a Genesis or creation is prominent in Tswana oral tradition. It is also believed that all Tswana were created by a supreme being Modimo only to emerge from a cave known as Lôwe, some eleven kilometres northwest of Mochudi in Botswana. The Lôwe cave is three to four meters in diameter and three to four meters deep with a sand bottom, stone imprints of animals and human feet are allegedly proof of this creation (Reyneke 1971:100).

Other neighbouring communities who were believed to frequent the cave were the Hlalerwa of Bobididi and the Masilo of Mabalingwe.

#### 3.12.3.2 The religious and ritual context of Madimatla

Modimo is the creator of all humans and he controls nature and will penalize humans by drought, hail, thunder and death. He is known as Modimo wa modimo (God of all gods), and his will (fa modimo o rata) triumphs and 'He knows [all]' (Go itse Modimo). When humans die they are buried facing towards the planet Mars (Kgogamasigo) and ascent to Modimo (Reyneke 1971:102). Schapera (1953: 59) mentioned the existence of a cannibalistic ogre named Dingwe which is fenced off by wearing charms. Among some Tswana tribes there are also the believe in demi-gods such as Lôwe (note the origin site), Tintibane, Matsieng and Thobega whose footprints are carved out at rocky outcrops. Offerings to these beings consist of meat, corn and beer. These beings have the power to bring rain, provide earthen fertility and guarantee success during war.

However, the *Badimo* (plural of *modimo*) are the human ancestors and are contacted and mediated via trained practitioners known as *dingaka* (*ngaka*=singular). These *badimo* can be approached via physical phenomena such as an ant-heap funnel, a bee species knows as *mok(k)* a and a cave knows as Madimatla (Reyneke 1971: 102). Schapera (1953:59-60) described the belief in the *badimo* as the 'dominant cult', even in the present time (Pilane 2002:75). Apart from one's individual or personal obligations to the ancestors there are communal or tribal rituals which are performed under the auspices of the chief and his healers. These rituals include the doctoring of the army (*go foka marumo*), the blessing of the capital of royal residence (*go thaya motse*), the blessing and safeguarding of the tribal boundaries (*go bapola lefatshe*) against pestilence and the invasion of a foe. Tribal rituals during which the ancestors' blessings are sought also include the blessing of the boys' (*bogwera*) and girls' (*bojale*) initiation as well as rain making (*go fethla pula*).

One is approached by one's ancestor (*modimo*) by means of dreams and sickness, or even disaster - personally, or among members of the entire community. Humans live on earth in order to please both *Modimo* as well as the *badimo*. The *badimo* can also approach an individual through his/her



consciousness (*bodingwama*) and mental disturbance is a common condition as a result of this. The *badimo* can be appeased or venerated via the local chief (*kgosi*), ward headmen (*matona*) or in one's personal capacity. The *badimo* are the intermediaries between *Modimo* and humans (Reyneke 1971:103).

#### Categories of healer

The practice and training of *bongaka* ([African] 'traditional healing') is extensive and healers can eventually specialise in a number of fields. *Dingaka e a dinaka* ('Healers with horns') apply a variety of diagnostic and healing utensils while 'healers without horns' (*dingaka e tshopya*) do not have these instruments to their avail. Schapera (1938:256) termed them 'hornless magicians'. These latter healers are experts in the botanical use of medicines but are not that much in touch with the spiritual world, or the world of witchcraft as the in the case of the former. The medicines are known as *dipheko*. The healer with horns is reputed by past successes and can even track a lost child. There are also other specialist healers such as professional rainmakers (*barôka ba pula*) who store their medicines in an enclosure known as *segotlwana sa pula* as well as the tribal doctors known as *dingaka tsa morafe* (Schapera 1953: 62).

A third category of healing is known as a *sedupe* who sucks (*go dupa*) the evil substances from the patient's body using a 15cm to 16cm long horn (*motlhogo*). Both types of healer above may also practice in the category of *sedupe*. This evil which is literally sucked from the body manifests as a frog, human, animal hair, hard fat, and a type of beetle ('toktokkie'), a bat, snake or even a fly. On request the patient rids her/himself from the evil by vomiting or by means of a laxative. Bodily incisions might be made on the skin of the patient after the divination bones are consulted. By using bees' wax as a seal a vacuum is created in the cavity of the suction horn which sucks up the evil or contaminated blood in the cavity. The contamination is often referred to as an evil crocodile (Reyneke 1971: 122-126).

A fourth dimension in Kgatla (and Tswana) healing and religion is known as *boloi* or witchcraft. Any person can act as a witch (*moloi*) and has the ability to bring about lightning as a form of revenge, urinal infection and a lame arm as manifestation of jealousy. A jealous *ngaka* might render a colleague to become bedridden (Reyneke 1971:127).

# Training and apprenticeship

Potential healers are summoned by means of dreams or divine intervention, yet the vocation of healing is often hereditary. The healer practices at her/his own house or homestead. Many healers nowadays practice healing as a profession (*papadi*) (Reyneke 1971:133). However, some experienced healers are concerned about the quality and ethical orientation of some of these operators.

**Case study:** While at Madimatle cave a party of three men arrived including their 'patient' carrying a chicken, some traditional beer, snuff, etc. the healer in this case wore the regalia of the ZCC church. They asked permission to enter and perform their ritual from my informants whom they regarded as the



custodians of the cave. Upon the permission being granted my informants expressed their concern about the abuse of the cave for ulterior motives.

The duration of the training of a healer is at least seven months under the internship of an experienced healer who is paid in cash or by means of an ox. It is said that the learner not only receives formal training but that 'she/he is caused to drink the *bongaka*'(*o o nosiwa bongaka*), which, among others include rites such as drinking the blood of an ox, dip naked underwater in order to have an encounter with the water snake. The learner will also undergo bodily incisions, which render her/him invisible and which causes her/him to be fearless and invisible and enable her/him to 'disappear' unnoticed for up to two days. Adding to this the drinking of Mamogaswa's vomit, a green and slimy substance, will empower the aspirant healer (Reyneke 1971: 133-137).

The paraphernalia and diagnostic utensils of the healer are miscellaneous. It includes a cap made of the skin of a wild cat (*tshipa*) or of a jackal (*phokobje*), the tail of a wildebeest known as *seditse sa kgokong*, a necklace, bones, sometimes the Mankgwenyane (a 'magical' stick) and a medicine bag (*motlhogo*), including the *dipheko* which is wrapped in paper. In addition he carries a spade or iron rod (*kepu*) as a digging tool, a hand chisel (*phalo*), a spear (*lerumo*), a flute (*phala*) and horns (*manaka*) filled with medicines (Reyneke 1971: 139-142).

#### Madimatla and the healer

Healers are in regular contact with the intermediary world of the ancestors (*badimo*). These *badimo* are often 'contacted' at isolated places and in the vicinity of natural phenomena such as springs, mountains and caves. One such venue is Madimatle cave some 30 to 40 kilometres northwest of Thabazimbi. Upon approach at the cave at Madimatla all the 'creatures of God' make themselves audible: a sheep and goat will bleat, a cockerel crows, a cow bellows, and even the milking of a cow in a bucket is audible (*kúr*, *kúr*, *kúr*), women singing and stamping mealies or *mabelo* - in short, all of village life in the *motse wa badimo*. The cave is the entrance of village life, the living and real world of the ancestors.

Madimatle also serves as a source of information, knowledge and even as an oracle. Reyneke related (1971:147) that a certain healer needed to know the sex of an egg which he intended to use on a patient and he once made the journey to Madimatla to receive clarity. An expected answer from the *badimo* would not necessarily emerge immediately but only during the next day. The answer is brought by a 'person' and with it comes a specific command, assignment or a wish. It is believed said that the *badimo* are 'hungry' and demand to be fed using the *matsogo* stones, a potsherd (*lengena*) which contains medicine and porridge (Reyneke 1971:148, Pilane 2002:74). When the ancestors demand that a tombstone be erected they say: *re a gatsela* ('we are cold') (Pilane 2002:74).

The ancestors are evoked by the phrase starting with: 'Modimo wa bo ntate-mogolo... 'etc. (Reyneke 1971:147). During my presence the ancestors were contacted in a similar way with each healer repeating the phrase above, followed by revealing the own identity, including her/his kinship tie with the



ancestors (child/ daughter/ son of so-and-so), place of residence, name of guest (myself in this case), purpose of the visit, etc. The felt omnipresence of the ancestral spirits by the healers is clearly audible by their uttering of bowel and vocal sounds, even coughing. Snuff is imbibed as a gesture of connectivity.

The cave is said to be 'endlessly' deep and it contains large cavities sizable enough to house the ancestral village and daily village activities of the *badimo*. One would hear the sounds of animals, people talking, people building houses, people cooking, etc. At the entrance around the periphery there are chimneys where the smoke of ancestral fires often emerge and which are visible at a distance. At one such chimney near the entrance I sensed the air flow from beneath. Madimatle has several smaller entrances and chimneys some of which are almost invisible to outsiders but which are well-known to the healing community (Personal communication: BKT, 2014).

#### **Power medicines**

Medicines which are used by the healer have a zoological, botanical, entomological or human origin. Reyneke (1971; 306-322) compiled a comprehensive list of these. According to spokespersons most of these are still used today although some are said to become difficult to obtain firstly since its natural resource based have become scarce or extinct. In the second instance some medicines are financially not affordable, while in the case of others transportation to the site of origin might be a problem. Nowadays modern commercial substances are used in combination with the original medicines, although the original ones are still believed to be more powerful and efficient. Medicines of a human origin (e.g. organs) are obviously extremely controversial and illegal.

There is a wide range of medicines of a herpetological origin. Even though some are some are of mythological nature they are perceived as real. The following is a concise list: snake (noga), mamba (mokopa), a type of snake known as phika, python (tlhware), the vomit of Mamogaswa (mythological water snake) obtainable at Madimatla, Modipela (the mountain python), Kgwanyape (the wind snake believed to be fast and furious) which has the capacity to blow away rooftops and for which there are many well-known past and present recorded cases, kgokela (the water snake which live in deep pools) and the puff adder (lebolobolo). The head of the puff adder is used as medicine and its presence in one's village is a sign of tranquillity and peace. Others include the crocodile (kwena), water leguan (rabole, polometsi), eel (tala-bodiba), chameleon (leobu), a lizard knows as mokgatitswana, the sand lizard (rankgatane), frog (senanatswii) and the water tortoise (kgapa-ntheng).

Other medicines include a type of sea shell (*lewatle*), the lightning bird (*tladi*), fish eagle (*kgadira*), ostrich (*mpshe*), vulture (*nong*), hamerkop bird (*mamasiloanoka*), honey bird (*tshetlo*), the black bird (*kuanese*) and a variety of other bird species. A cockerel's head is to be consumed by an epilepsy patient to prevent the sickness form becoming airborne.



Parts of other animals which are used for medicinal purposes are: the lion (*tau*), leopard (*nkwe*), the trunk of an elephant (*tlou*), hyena (*phiri*), eland (*phofu*), the droppings of a kudu (*tholo*), the red buck (*phala*) and the *mfela* (rheebok). The afterbirth of a horse mare is used on women who suffer during giving labour. A dog's blood is used as a remedy against epilepsy and also to scare away a swarm of locusts. Earthen materials such as yellow soil, a fire stone, grave soil and fire are all part of the healer's medicines. Human tissue, although used on occasion, has always been controversial (Reyneke1971: -306-335).

#### Intervention by the missionaries

The global Christian missionary intervention did not escape the Tswana. The missionary influence on the Tswana of both Botswana and South Africa had been extensive since 1816. By 1870 a variety of missionary denominations established congregations among most Tswana tribes. Among these were the so-called Congregationalists (the London Missionary Society), the Dutch Reformed Church, the Methodists, Lutheran, Anglican, Roman Catholic and the separatists. Tswana communities were targeted by specific churches such as the Kgatla by the Dutch Reformed Church, the Malete by the Lutheran Church and the Ngwaketse by the Congregationalists.

The missionaries not only introduced Christianity but also literacy, Western architecture, vocations such as preacher and teacher, religious holidays such as the Sabbath and Easter, clothing, medicine and new codes of ethics and morality. The 'missionary has become not only the tribal priest, but also the guide and advisor of the people in many spheres of life remote from religion' remarked the anthropologist Isaac Schapera (1953: 58).

Cultural institutions such as initiation of boys and girls which include male circumcision were in the process abandoned - often initiated by a converted chief (*kgosi*). Needless to say the missionaries targeted traditional religion and medicine in particular. The missionary intervention did not go unchallenged and caused rifts and schisms among families, kin, villages and communities. Such rifts often caused migration, violence and permanent alienation. The two world views were irreconcilable but also became a fruitful arena for the African syncretistic and separatist churches within which to build sizable memberships, i.e. the Zion Christian Church (ZCC) (compare Comaroff 1989).

#### 3.12.3.3 The heritage significance of the site

The ethnographic record (1953, 1971) referred to the heritage importance of the Madimatle site. It is one of similar sites (e.g. Lôwe) in the Tswana oral record and these sites are central in Tswana (Botswana and South Africa) creation mythology and they have been known in Tswana oral tradition since the early mythological past.

Madimatle is central to the cosmological world of the Kgatla and neighbouring communities. The site boasts of a historical chronology of usage and it managed to maintain its importance in the ritual and religious world of these communities (compare Equiperspectives 2014:43, 53, 59-61).



The site is important in both its tangible and intangible dimensions. Any disturbance as far as its immediate physical environment is concerned will be a serious breach in terms of its religious and ritual meaning, integrity and relations with its traditional custodians as well as the public.

# 3.13 Air Quality

The farms Donkerpoort 448KQ, remaining extent, and Randstephne 455KQ, remaining extent, on which the gravel roads were unlawfully constructed falls within the Waterberg district municipality. Waterberg is currently not an air pollution 'hot spot' but has been declared a priority area anticipating the future developments in the area which could result in the area experiencing severe air pollution problems. As a priority area, the area is considered to exceed ambient air quality standards and cause a significant negative impact on air quality and human health. Other operations in the Thabazimbi area that impact on the air quality include Thabazimbi Mine and other industrial activities in or closer to the town of Thabazimbi.

# 3.13.1 Site specific description

Airshed Planning Professionals (Pty) Ltd was commissioned to measure atmospheric deposition from July 2011 to March 2012 on the Donkerpoort and Klipgat prospecting rights, in Thabazimbi, Limpopo province (Refer to Appendix F7). According to these studies values continue to be well within proposed residential limits. Refer to the table below for deposition results.

Table 33: Atmospheric deposition results (mg/m²/day) at Aquila Steel Iron site: June 2011 to July 2012 taken from the atmospheric deposition monitoring report compiled by Airshed Planning Professionals

		'	May 2011–Nov 20	11		
Location	30 May-	30 Jun-	1 Aug-	28 Aug-	28 Sep-	31 Oct-
Number	30 Jun 2011	1 Aug	28 Aug	28 Sep	31 Oct	28 Nov
1	47	258	284	145	393	212
2	181	269	201	46	overturned	Replaced
3	57	130	179	24	102	78
4	177	76	84	0	150	58
5	291	160	62	48	210	111
6	262	126	139	overturned	211	113
		<u> </u>	Nov 2011-Aug 20	12	<u>'</u>	<u>'</u>
Location	28 Nov 2011-	27 Jan-	27 Feb-	29 Mar-	7 May-	5 July-
Number	27 Jan 2012	27 Feb 2012	29 Mar 2012	7 May 2012	4 June 2012	2 Aug 2012
1	80	127	475	83	160	133
2	Damaged	119	403	25	53	141
3	95	101	Damaged	7	Damaged	25
4	249	Damaged	410	22	39	61
5	81	162	412	55	79	109
6	172	124	401	27	Damaged	101



# **3.14** Noise

An environmental noise survey was conducted by Varicon from April 2011 to February 2012 around the contravened site as part of the Environmental Impact Assessment (EIA) process to be followed for the Meletse Iron Ore project (Refer to Appendix F8 for comprehensive details on this survey). The sound levels were evaluated against the standards as specified in the SABS Code of Practice 0103 of 2008 (The measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication) with reference to Code SABS 0328 of 2003 (Environmental Noise Impact Assessments).

For the purpose of this survey and according to SABS 0103 of 2008, it is probable that the noise will be annoying, or otherwise intrusive to the community, or to a group of people, if the rating level of the ambient noise under investigation exceeds the typical rating levels for the ambient noise as given in the table below. Applicable values in the tabulation are highlighted.

Table 34: Typical rating levels for ambient noise in districts

Type of	Equivalent Continuous Rating Level (L <sub>Req.T</sub> ) for Ambient Noise								
District	Outdoors			Indoors, with open windows					
	Day-night	Day-time	Night-time	Day-night	Day-time	Night-time			
(a) Rural	45	45	35	35	35	25			
Districts									
(b)	50	50	40	40	40	30			
Suburban									
with little									
road traffic									
(c) Urban	55	55	45	45	45	35			
Districts									
(d) Urban	60	60	50	50	50	40			
districts									
with some									
workshops,									
business									
premises									
and with									
main									
roads.									
(e) Central	65	65	55	55	55	45			
Business									
Districts									



(f)	70	70	60	60	60	50
Industrial						
Districts						

Stationery noise levels were measured at pre-selected position around the contravened area on the top of the mountain and some measurements were also taken at the bottom of the hill at the main entrance as part of the baseline. The measurement positions were selected around the contravened area and at specific locations down the mountain side. Fortunately all activities on the mountain are remote and secluded from any formal or informal communities. The noise levels all were measured within the recommended levels that could cause disturbance to any community that could be affected. Refer to Table 35 for noise results in February 2012. According to Varicon's findings the noise levels in Portion 4 is 24.9dBA and Portion 5 is 33.6dBA. These levels are well within the prescribed requirements of rural districts which are 45dBA for daytime and 35dBA for night time. The noise levels of Portion 1, 2 and 3 were slightly above the prescribed requirements, but these should have no influence on any surrounding communities. The sound levels at the farmhouse are perfectly within prescribed requirements and the activities should present no disturbance to the farming communities.

Table 35: Typical rating levels for ambient noise in districts

Typical Rating (SABS 0103) (Category A) 45,00		Remarks  Day Time: - Noise from the drill machine.  Machine is secluded from the measuring
Typical Rating (SABS 0103) (Category A) 45,00	Excess <sub>\(\Delta\Lambda\Lambda\Req,T\) (dBA)</sub>	Day Time: - Noise from the drill machine.
Rating (SABS 0103) (Category A) 45,00	(dBA)	Day Time: - Noise from the drill machine.
(Category A) 45,00	+6,6	
-,	+6,6	
45,00		Machine is secluded from the measuring
45,00		position.
	+16,6	Day Time: - Again the noise from the drill
1		machine. Measuring position on top of
		the hill direct in line with the noise from
		the drill machine
45,00	+17,6	Day Time: - Main noise sources are the
		two drill machines. Measurement again
		on the hill top and directly in line with the
		noise sources. Slight breeze is carrying
		the noise towards the measuring position.
45,00	-20,1	Day Time: - General background and
		bushveld noise. Totally isolated from the
		noise generated by the drill machines.
45,00	-11,4	Day Time: - General bushveld noise and
		some vehicle traffic on the dirt road. No

Noise Levels at Various Sampling Locations									
Main entrance into the			influence from the activities at the mine						
mining property at the			site on top of the mountain.						
bottom of the mountain.									

# 3.15 Visual aspects

As unlawful road construction has already been undertaken. The information as presented within this section reflects the current status as obtained from: Zone Land Solutions. June 2014. Visual impact assessment, Prepared as part of a Section 24G rectification application, Proposed Meletse Iron Ore Project. The report is available in Appendix F9.

# 3.15.1 Viewshed analysis

#### 3.15.1.1 Dominant View Corridors

As a first step of this Visual Impact Assessment (VIA), a survey was undertaken to determine the existence of significant view corridors associated with the project site. A view corridor is defined as 'a linear geographic area, usually along movement routes, that is visible to users of the route' (DEA&DP, 2005). Accordingly, only one dominant view corridor was identified in the region, namely:

a) **P240-** The main movement route along the southern boundary of the project site.

When determining dominant view corridors, one has to take into consideration the class of the road, the dominance and nature of the town/settlement in which direction it travels and the distance from the proposed activity. In this regard, the nearest settlement to the project site is the district town of Thabazimbi, approximately 30km west of the project site.

The P240 connects with the D928 (approximately 4.5km west of the site) and the D1485 (15km from the site) en route to Thabazimbi. All of these roads have a gravel surface and carries little load. None of these roads where therefore regarded as dominant view corridors.

## 3.15.1.2 Relevant Topographic and Physical Characteristics

A further key aspect affecting the potential visual impact of any proposed activity is the topography of the project site and the surrounding environment and the existence of prominent biophysical features from where the project site is visible. The topography and the major ridgelines of the area were subsequently determined and mapped by using a *Digital Elevation Model*<sup>21</sup>.

As illustrated by the DEM below, the project site is located between contour levels 1000 and 1862m above sea level. This represents a 862m vertical climb over ±4.3km. As mentioned above, Meletse

A Digital Elevation Model (DEM) is a geographic information system-based outcome generated from contours for a specific area. In this instance, 20m contour intervals for reference sheet no. 2427ad, 2427bc, 2727bd, 2427ca, 2427cd, 2427da, 2427db, 2427dand2427dd were used to calculate the DEM for the region.



peak is the highest peak within 10km from the project site. The mountain is therefore particularly visually exposed and visible from most observation points in the landscape as all observation points are located at a height below the project site.

The DEM also shows the two main east-west ridges between Thabazimbi and the project site. It is within the underlying shales and dolomites of these ridges that the iron ore deposits are located.

The extent of the prospecting roads is such that it traverses the mountainous top of the property. The prospecting activities therefore have an impact on the skyline as viewed from the immediate surroundings of the project site and from the wider region.

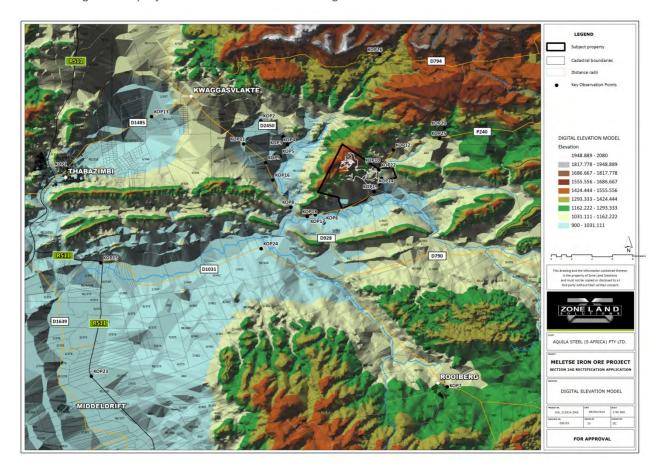


Figure 72: Digital Elevation Model illustrating major ridgelines and dominant view corridors in the subregion.

#### 3.15.2 Digital Viewshed Analysis

The viewshed<sup>22</sup> analysis was undertaken in accordance with the *Guideline Document for involving Visual Specialists in EIA Processes*. Geographic Information Systems (GIS) technology was used to analyse and map information in order to understand the relationships that exist between the observer and the observed view. Key aspects of the viewshed are as follows:

A viewshed is defined as 'the outer boundary defining a view catchment area, usually along crests and ridgelines. Similar to a watershed'. A Viewshed Analysis is therefore the study into the extent to which a defined area is visible to its surroundings.

- It is based on a single viewpoint from the highest point of the prospecting activities.
- It is calculated at ground level as no permanent infrastructure has been established on site.
- It represents a 'broad-brush' designation, which implies that the zone of visual influence may include portions that are located in a view of shadow and it is therefore not visible from the project site and *vice versa*. This may be as a result of landscape features such as vegetation, buildings and infrastructure not taken into consideration by the DEM.
- The viewshed generated from each of the selected observation points referred to in Annexure 2 is calculated at 1.7m above the natural ground level to reflect the average height of person either walking or sitting in a vehicle.

As illustrated by the generated viewsheds (refer to *Figure 73* below), the *zone of visual influence*<sup>23</sup> is primarily to the west and south-west. A second viewshed 'pocket' is located to the north-east. The viewshed is primarily associated with the major topographical features of the area and due to the height of the project site, the viewshed extends for more than 30km from the project site. The viewshed coincide with the mentioned dominant view corridor and several farmsteads and tourist facilities in the region.

The GIS-generated viewshed illustrates a theoretical *zone of visual influence*. This does not mean that the proposed activity would be visible from all observation points in this area.

Zone of visual influence is defined as 'An area subject to the direct visual influence of a particular project'.



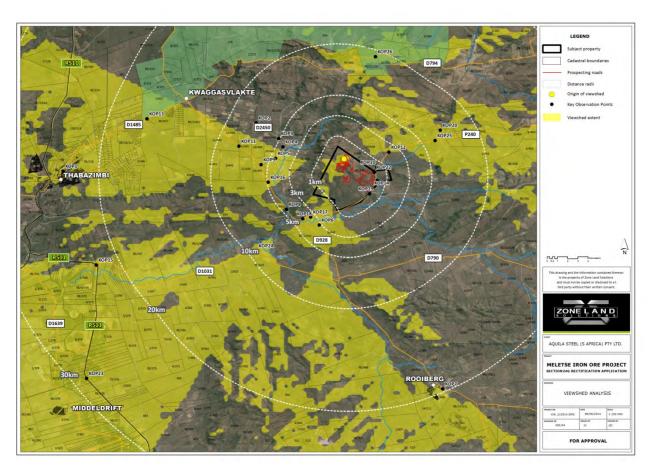


Figure 73: Viewshed generated from the highest point of the prospecting activities.

The distance radii indicating the various viewing distances from the project site are illustrated by Figure 73. Also illustrated by the figure is the P240 view corridor to the south and the settlements of Thabazimbi, Middeldrift, Rooiberg and Kwaggasvlakte.

## 3.15.3 Selected observation point assessment

The selected *observation points* were categorised and assessed in terms of the following assessment criteria.

Table 36: Sected observation point categorisation

KEY	DESCRIPTION		
NUMBER	Each observation point was allocated a reference number.		
CO-ORDINATES	The co-ordinates of each of the observation points are provided.		
ALTITUDE	he altitude of the observation point was provided in meters above sea level.		
DESCRIPTION	A brief description where the observation point is located is provided.		
TYPE	Each observation point is categorized according to its location and significance rating. These		
	criteria include the following:		
	a) Tourist-related areas.		
	b) Corridors, including linear geographical areas visible to users of a route or vantage points.		
	c) Residential Areas/Farmstead.		
	d) Areas of cultural significance.		



PHOTOGRAPH	A photograph was taken from each observation point in the direction of the project site to verify
FIIOTOGNAFII	
	the digitally generated view-shed.
PROPERTY LOCATION	The location of the property was described as foreground, middle ground or background.
PROXIMITY	The distance between the observation point and the project site was provided in kilometres.
VISUAL SENSITIVITY	The visual impact considered acceptable is dependent on the type of receptors. A high (e.g.
OF RECEPTORS	residential areas, nature reserves and scenic routes or trails), moderate (e.g. sporting or
	recreational areas, or places of work), or low sensitivity (e.g. industrial, mining or degraded
	areas) was awarded to each observation point.
VISUAL EXPOSURE	Exposure or visual impact tends to diminish exponentially with distance. A high (dominant or
	clearly visible), moderate (recognizable to the viewer) or low exposure (not particularly visible to
	the viewer) rating was allocated to each observation point.
VISUAL ABSORPTION	The potential of the landscape to conceal the proposed development was assessed. A rating of
CAPACITY (VAC)	high (effective screening by topography and vegetation), moderate (partial screening) and low
	(little screening) was allocated to each observation point.
VISUAL INTRUSION	The potential of the development to fit in with the surrounding environment was determined. The
	visual intrusion relates to the context of the proposed development while maintaining the integrity
	of the landscape. A rating of high (noticeable change), moderate (partially fits into the
	surroundings) or low (blends in well with the surroundings) was allocated.
DURATION	With regard to roads, the distance (in kilometres) and duration (in seconds) for which the property
	will be visible to the road user, were calculated for each observation point.

## 3.15.3.1 Key observation point 5

KOP5 is situated on the D2450 west of the project site. As reflected in the table below, the observation point is located at a much lower altitude than the project site. *Figure 754* also indicated that the visual absorption capacity of the landscape en route to the project site is very low, but the viewshed does not extend beyond the western edges of the property (with the exception of Meletse Peak). Hence, the visual impact of the prospecting roads from this point is expected to be negligible.



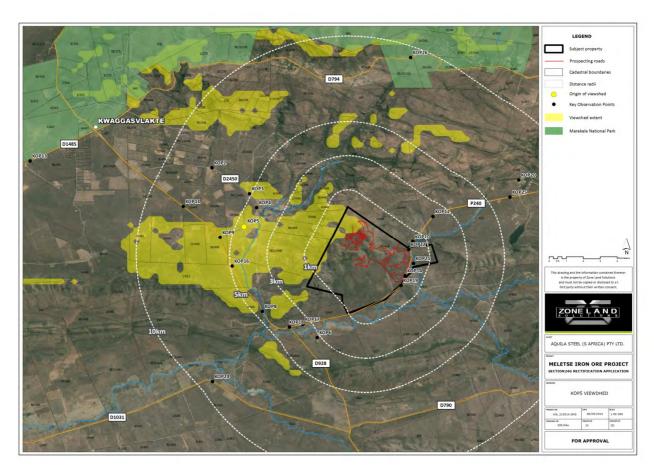


Figure 74: KOP5 Viewshed. Areas shaded yellow is theoretically visible from KOP5.

NUMBER:	KOP5	CO-ORDINATES:	S	E
ALTITUDE:	998m		24 °35'25.75"	27°35'46.76"
DESCRIPTION:	KOP5 is located at the Thaba	a Pulani Game Lodge west of the	e project site.	
TYPE:	Tourist facility	PHOTO:	Figure <b>75</b> ; Figure 76	
PROP. LOCATION:	Background	PROXIMITY:	4.5km	
VISUAL SENSITIVITY:	High			
VISUAL EXPOSURE:	Low	VAC:	High	
VISUAL INTRUSION:	Low	DURATION:	N/A	



Figure 75: View towards the project site from KOP5. Although the Meletse peak is particularly visible from this point, the prospecting roads cannot be distinguished in the landscape.





Figure 76: Aerial view towards the project site from KOP5.

# 3.15.3.2 Key observation point 9

KOP9 is situated approximately 5.5km west of the project site at the entrance to the Motlapi Wildsplaas. As illustrated below, the visual absorption capacity of the landscape from this particular observation point is relatively high. Taking into consideration that the prospecting activities is situated more than 5km from the observation point and that it is mostly situated on the southern-facing sloped, the impact of the prospecting roads from this point is negligible.



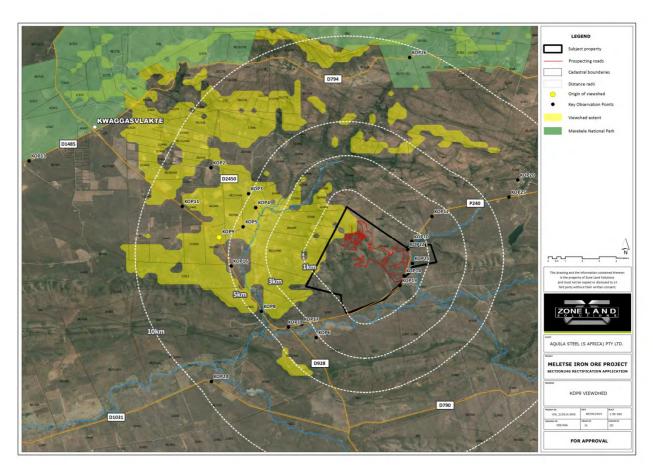


Figure 77: KOP9 Viewshed. Areas shaded yellow is theoretically visible from KOP9.

NUMBER: ALTITUDE:	KOP9 1007m	CO-ORDINATES:	<b>S</b> 24 °34'45.22"	<b>E</b> 27°35'01.19"	
DESCRIPTION:	KOP9 is located at the Motla	pi Wildsplaas west of the project	site.		
TYPE:	Game farm	РНОТО:	Figure 78; Figure 79		
PROP. LOCATION:	Background	PROXIMITY:	5.5km		
VISUAL SENSITIVITY:	High		1		
VISUAL EXPOSURE:	Medium	VAC:	Medium		
VISUAL INTRUSION:	Medium	DURATION:	N/A		



Figure 78: Panoramic view from KOP9 towards the project site.





Figure 79: Aerial view from KOP9 towards the project site.

# 3.15.3.4 Key observation point 12

KOP12 is situated within the middle ground of the project along the P240 to the east. The observation point is in direct line of sight of the project site and has undisrupted views onto the latter (refer to Figure 81). The lack of tall vegetation and landscape features coupled with the proximity of the observation point to the project site effectively means that the prospecting roads have a moderate visual impact on receptors at this point.



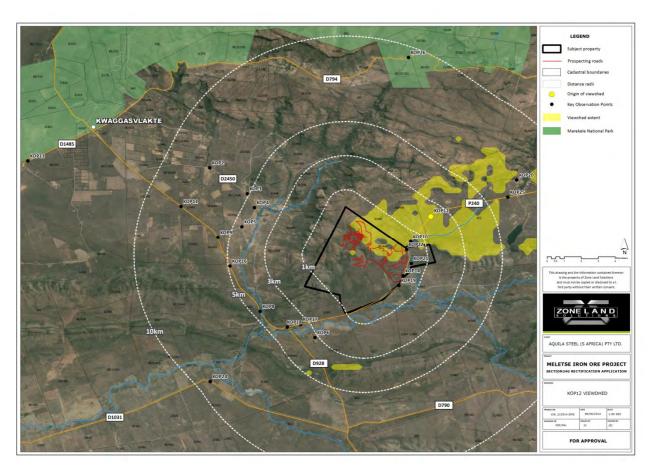


Figure 80: KOP12 Viewshed. Areas shaded yellow is theoretically visible from KOP12.

NUMBER:	KOP12	CO-ORDINATES:	S	Е		
ALTITUDE:	1100m		24°35'05.40"	27°41'46.11"		
	•	-				
DESCRIPTION:	KOP12 is situated on	the P240 north-east of the project	site.			
TYPE:	Distributor	РНОТО:	Figure 81	Figure 81		
PROP. LOCATION:	Middle ground	PROXIMITY:	2.285km	2.285km		
VISUAL SENSITIVITY:	Low	<b>-</b>	<b>-</b>			
VISUAL EXPOSURE:	High	VAC:	Low	Low		
VISUAL INTRUSION:	High	DURATION:	11km @ 80km/h			
			8.25min westwards			



Figure 81: Panoramic view from KOP12 towards the project site.



# 3.15.3.5 Key observation point 19

KOP19 is located at the entrance gate to the Meletse Private Game Reserve, opposite the project site. The GIS-generated viewshed indicates that the majority of the prospecting roads are visible from this point. *Figure 84*, however, verifies that due to the dense vegetation stands, only the upper reaches of the Meletse peak is visible from this point. The visual impact from this point is therefore regarded as moderate.

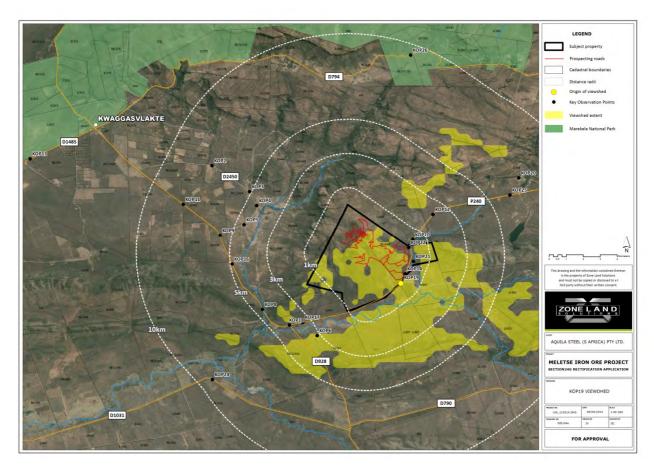


Figure 82: KOP19 Viewshed. Areas shaded yellow is theoretically visible from KOP19.

NUMBER:	KOP19	CO-ORDINATES:	S	Е
ALTITUDE:	1019m	00 0112111711201	24°36'16.95"	27°40'45.16"
DESCRIPTION:	KOP19 is located at the entra	ance to the Meletse Private Gam	e Reserve opposite th	e project site.
TYPE:	Tourist facility	РНОТО:	Figure 83; Figure 84	
PROP. LOCATION:	Foreground	PROXIMITY:	8m	
VISUAL SENSITIVITY:	High			
VISUAL EXPOSURE:	High	VAC:	Moderate	
VISUAL INTRUSION:	High	DURATION:	N/A	





Figure 83: View from KOP19 towards the project site.



Figure 84: Aerial view from KOP19 towards the project site.

## 3.15.3.6 Key observation point 20

KOP20 is located at the SAPS Operational and Tactical Academy off the P240, east of the project site. The GIS-generated viewshed indicates that the upper slopes of the Meletse Mountain, and as a result, the upper-most prospecting roads are visible from this observation point. Even though being located at some distance from the project site (7km). *Figure 86* illustrates that the Meletse Mountain is still very prominent and that the prospecting roads is particularly visible against the mountainous backdrop. The prospecting roads therefore have a medium to high visual impact from this point.



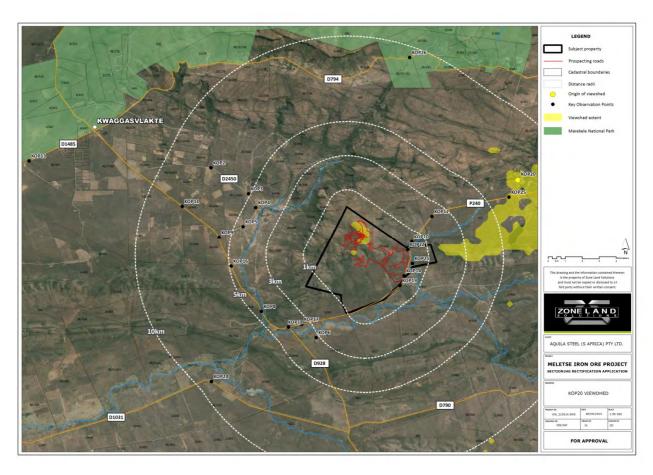


Figure 85: KOP20 Viewshed. Areas shaded yellow is theoretically visible from KOP20.

NUMBER:	KOP20	CO-ORDINATES:	S	E
ALTITUDE:	1190m		24°32'56.30"	27°44'29.90"
		•		
DESCRIPTION:	KOP20 is located at th	e SAPS Operational and Tactical	Academy east of the project	ct site.
TYPE:	Training facility	РНОТО:	Figure 86; Figure 87	7
PROP. LOCATION:	Background	PROXIMITY:	7.17km	
VISUAL SENSITIVITY:	High			
VISUAL EXPOSURE:	High	VAC:	Low	
VISUAL INTRUSION:	High	DURATION:	N/A	





Figure 86: View from the P240 next to KOP20 towards the project site.



Figure 87: Aerial view from KOP20 towards the project site.



## 3.15.3.7 Key observation point 21

KOP21 represents the observation point closest to the project site. The visual absorption capacity of the vegetation in the vicinity of the observation point only covers certain lower-lying sections of the project site. As illustrated by Figure 89, the Meletse Peak is still visible. Coupled with the sensitivity of the observation point and the proximity to the prospecting activities, the visual impact from this point is regarded to be of moderate significance.

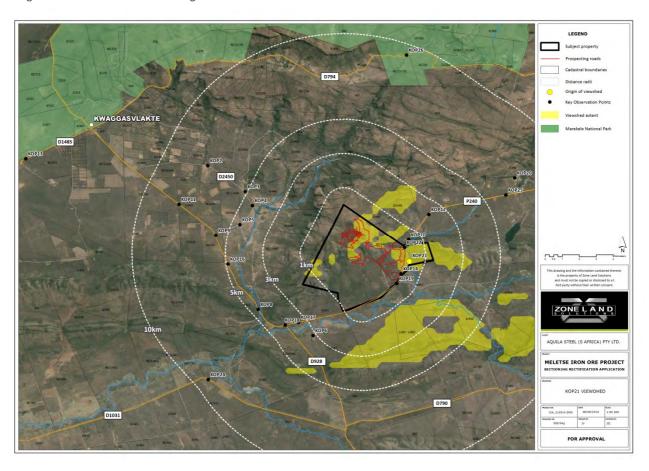


Figure 88: KOP21 Viewshed. Areas shaded yellow is theoretically visible from KOP21.

NUMBER:	KOP21	CO-ORDINATES:	S	E
ALTITUDE:	1025m		24 °35'35.55"	27°41'09.29"
DESCRIPTION:	KOP21 is located at the entra	ance gate to the lodge opposite t	he project site.	
TYPE:	Tourist facility	РНОТО:	Figure 89	
PROP. LOCATION:	Foreground	PROXIMITY:	200m	
VISUAL SENSITIVITY:	High			
VISUAL EXPOSURE:	Low	VAC:	Low	
VISUAL INTRUSION:	High	DURATION:	N/A	





Figure 89: View from the P240 next to KOP21 towards the project site.

# 3.16 Socio-economic aspects

This section was compiled using the following documents:

- Waterberg District Municipality 2011/12 Integrated Development Plan;
- Thabazimbi Local Municipality Integrated Development Plan 2012/13; and
- Muller, G. March 2014. Aquila Meletse alternative land-use economic impact assessment.
   Appendix F14.

#### 3.16.1 Limpopo Province

Limpopo's population stands at 5.5 million, the largest proportion of which (27.2%) is resident in the Vhembe district municipality.

Unemployment in the province averages 48% (as against the national average of 26%) and about 65% of the population is classified as living in poverty. Its considerable reserves of agriculture, mineral and tourism resources remain hugely under-exploited.

### 3.16.2 Waterberg District Municipality

The Waterberg District Municipality has a total population of 596,092 of which the majority of people in villages and townships are still trapped in poverty. The state of local economy is such that 21% of households are rated as low income households as they earn less than R1, 000 per month, with 20% of the potentially economically active population unemployed.

While 86% of South African households have access to a piped water source, 83% do so in WDM while 96% do so in TLM. It is however important to note that on average less households access their water from their own yard in South Africa than in TLM and WDM. Only 40% of the WDM residents have flush toilet sanitation. Statistics South Africa estimates that TLM fares better with 58% having access to flush toilet sanitation.

The water supply situation is that some of the schools particularly those in rural areas have no access to on-site water. The schools are also in need of refurbishment and services such as water and



sanitation. There is also a great need for high schools in the rural areas; the majority of education facilities are primary schools

In the case of WDM, the lack of access to electricity is most acute in remote rural areas. In TLM, almost 50% of households rely on gas, paraffin and candles. The majority of households which do not have access to electricity in the municipality are located in the informal settlements and new settlements. Ipeleng is by far the most electrified host community, with over 99% of household having electricity. The remaining settlements have electricity access of between 55 and 65%.

On the health front, 110 villages (representing nearly 65% of the population) are situated outside the clinic catchment areas.

#### 3.16.3 Thabazimbi Local Municipality

The TLM has a total population of 85, 234. Most of the people in the area are between the ages of 30 and 49 years (37.87%) followed by the 5-19 year age group, which represents 22.18% of the population.

Males outnumber females with approximately 58% of the total population being male; this can be ascribed to the number of mine workers employed locally and job seekers who have settled in the area. The mines are the largest employers, followed by agriculture and the service sectors. Approximately 20.6% of potentially economically active people are unemployed.

In national terms it is a mature population with only 34% of the population under the age of 20. This possibly reflects the high degree of labour migrancy as a result of the mines in the region. Population projections from 2001 onward show a steady annual increase of 2.63% per annum to a total of about 85,234 in 2011. The statistics used here are based mainly on the 2011 figures released by Stats SA.

Approximately 9,879 young people within the TLM are currently not attending school. 26.1% of economically active individuals in the TLM have attained a Grade 12 education. Alarmingly, only 8.1% have an education level higher than grade 12. The majority of economically active individuals have an education level that is below Grade 7. Refer to the table below for Thabazimbi Local Municipality Population Statistics.

Table 37: Thabazimbi Municipality Population Statistics (Census 2011)

Population group	Figures
Black African	72 103
Coloured	511
Indian or Asian	341
White	12 274
Total population	85 234

(\*Source: Census 2011 Community Profiles Database. Statistics South Africa.)



### 3.16.3.1 Major economic activities

The surrounding land is mainly focussed on agricultural activities and tourism with game farms. Mining is also a key economic activity in the municipality.

Agricultural activities in the area can be divided into three broad categories (www.thabazimbi.gov.za), namely irrigation farming, dry land crop production and cattle and game farming. Crops produced in the area include wheat, soya, maize, cotton, sunflower, sorghum, red pepper and a variety of fruit and vegetables. Livestock include cattle, goats, pigs and game. The agriculture sector in the municipality is declining, which poses a threat to jobs on farms. The area is well known for game farming. The conversion of agricultural land to game farming is one of the economic challenges that face the municipality as it can lead to significant job losses.

The main tourism attractions in the area are the Marakele National Park (that forms part of the Waterberg Biosphere) and organised hunting activities. Tourism facilities in the area are regarded as adequate (Thabazimbi Local Municipality IDP 2013/14). Tourism in the area faces a number of challenges such as roads being in a poor condition and road signs not being adequate.

Thabazimbi Local Municipality (TLM) is endowed with a wealth of minerals and metals especially platinum and iron ore. A number of platinum mining operations such as Amandelbult and Union Mine (Anglo Platinum) and Northam Platinum Mine are situated south of Thabazimbi Town in addition; the Thabazimbi Iron Ore Mine is located in the municipality. Other commodities such as andalusite and dolomite are mined from the Rhino Andalusite Mine and PPC's Dwaalboom Cement Operation. There are seven active mines in the TLM area. The mining sector is the primary pillar of the TLM economy and employs 62% of the labour force.

The mining industry has been affected in several ways by the global economic meltdown in the final quarter of 2008. This has led to mine closures and retrenchments across all commodities. Before the global economic crisis, mines were expanding in the municipality and new mining projects were in early planning phases. The expectations were that more employment opportunities and increased residential and business development would be created in the area. The high prices of bulk commodities such as iron ore were expected to continue in the near future and this would contribute towards development in all economic sectors.

The situation in 2009 and beyond seemed challenging for both platinum producers as well as Thabazimbi Mine as commodity prices went down significantly. Recently some signs of recovery in metal prices have been noticed.



#### 3.16.3.2 Unemployment and employment

According to the Census 2011 statistics, approximately 20.6% of the labour force in the Thabazimbi Municipality is unemployed. The table below presents the economic status of the labour force population of Thabazimbi Municipality.

Table 38: Economic Status of Thabazimbi Labour Force Population (Census 2011)

Economic Status	Figures
Employed	52 132
Unemployed	4 306
Not economically active*	22 502
Total Labour Force	78 940

<sup>\*</sup>Note: Not economically active includes students, homemakers, the disabled, those too ill to work and anyone seeking work.

Of the total population of some 85 234 people, about 76.4% are aged between 15 and 65, which can be considered as potentially economically active. Of these, 20.6% are unemployed and 26.9% is the youth unemployment rate.

These figures are not surprising in light of the character of the main industries in the Municipal Area. The fact that the mining and agricultural sectors rely substantially on unskilled labour for hard physical labour is reflected also in the income distribution. More than 10,521 of the employed (51.8%) within the TLM earn below the minimum level of R 1,500 per month. The gender distribution of the income is considerably skewed towards the males, perhaps a reflection of the occupations available at Thabazimbi.

However, these figures cannot be accepted at face value. It is common to understate unemployment as many of those reflected as economically inactive are actually unemployed; also many of those reflected as self-employed (as, for instance, vendors) are actually unable to make a living.

#### 3.16.3.3 Access to basic services

#### Housing

TLM is dominated by farmland and small settlements. It boasts 3 towns (urban nodes); namely Northam town, Thabazimbi town and Amandelbult town. The towns are the result of the economic development associated with the mining activities taking place in the area.

Almost 26% of dwellings in TLM are informal in nature. The present demand for housing in the Thabazimbi urban node is high, and 30 serviced plots are available in Extension 8. However, owing to the poor economic climate, very few houses are being built there. The demand for houses in the new Regorogile Residential Area is also very high, and sufficient stands are available. Table 39 below indicates the types of accommodation available in the Thabazimbi Urban Node.



Table 39: Housing Available in the Thabazimbi Urban Node

Type of Accommodation	Quantity Available
Houses	1 069 (Thabazimbi Town)
Houses	199 (Ipelegeng)
Houses	59 (Town Council)
Houses	102 (Regorogile)
Plot Houses	30

<sup>\*</sup>Source: TLM Integrated development plan

#### Water provision

Formal settlements: Thabazimbi / Regorogile are the largest urban node in the area. The quality of housing (structural maintenance, gardening, etc.) in particularly the Kumba Resources Staff Village is visibly better than that available in the adjacent municipal village. Northam Town and Northam Platinum are located in the south of the Municipal Area and Rooiberg and Leeuwpoort located in the south-west of the area. Amandelbult is located to the south of Thabazimbi Town and between Thabazimbi and Northam. There are no former homeland areas located within the Municipal Area.

Thabazimbi, Regorogile and Northam currently have a quota of 9 mega litres per day from Magalies board. Regorogile and Thabazimbi have additional supply from seven boreholes. The boreholes are located at Group 5, 12 and Kumba Iron Ore Mine. Rooiberg and Leeupoort/Raphuti currently source their water from local boreholes. Schilpadnest water is also supplied from three working boreholes without any chlorination facilities.

Thabazimbi and Regorogile are using water borne sewer system. The existing water treatment plant caters for Thabazimbi town including Regorogile and Ipelegeng. The current capacity of the plant is 28 litres per second but the average daily flow is about 60 litres per second. The current sanitation system in Northam is 60% water borne and 40% septic tank. Leeupoort is septic tank. The Municipality empty the septic tanks for all the residents regularly and discharges the sewerage into the existing oxidation pounds. The outfall sewer has been partially constructed in Northam and the project is still outstanding. The municipality does not provide bulk water to the mines within its area of jurisdiction

- The main sources of potable water are:
- Pienaars River;
- Crocodile River; and
- Vaalkop Dam- Magalies Water Board.

#### Electricity

The municipality has electricity distribution license issued by NERSA in terms of the Electricity Act 41 of 1987. The license covers the following areas for distribution and retail:

- Greater Northam RLC (Portion);
- Thabazimbi TLC (Whole);
- Warmbad- Pienaarsrivier RLC (Portion); and



# • Rooiberg.

Currently the municipality is an Electricity Service Provider in Thabazimbi town, Regorogile extensions 3, 5, 6, 7, 9, Rooiberg and Raphuti. Eskom is for Northam, Regorogile extensions 2, 4, farms and mining areas.



# 4. ENVIRONMENTAL FRAMEWORK

# 4.1 Impact assessment methodology

The environmental risk of any aspect is determined by a combination of parameters associated with the impact. Each parameter connects the physical characteristics of an impact to a quantifiable value to rate the environmental risk.

Impact assessments should be conducted based on a methodology that includes the following:

- Clear processes for impact identification, predication and evaluation;
- Specification of the impact identification techniques;
- Criteria to evaluate the significance of impacts;
- Design of mitigation measures to lessen impacts;
- Definition of the different types of impacts (indirect, direct or cumulative); and
- Specification of uncertainties.

After all impacts have been identified, the nature of each impact can be predicted. The impact prediction will take into account physical, biological, socio-economic and cultural information and will then estimate the likely parameters and characteristics of the impacts. The impact prediction will aim to provide a basis from which the significance of each impact can be determined and appropriate mitigation measures can be developed.

The risk assessment methodology is based on defining and understanding the three basic components of the risk, i.e. the source of the risk, the pathway and the target that experiences the risk (receptor). Refer to Figure 90 below for a model representing the above principle (as contained in the DWA's Best Practice Guideline: G4 – *Impact Prediction*.

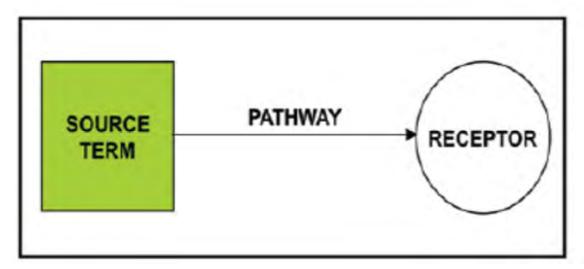


Figure 90: Impact prediction model



**PROBABILITY** of the impact is determined by calculating the average between the frequency of the aspect and the availability of a pathway to the receptor and the availability of receptor.

Table 40 and Table 41 below indicate the methodology to be used in order to assess the Probability and Magnitude of the impact, respectively, and Table 42 provides the Risk Matrix that will be used to plot the Probability against the Magnitude in order to determine the Severity of the impact.

Table 40: Determination of Probability of impact

Frequency of Aspect / Unwanted	Score	Availability of Pathway from the Source to the	Score	Availability of Receptor	Score
Event		Receptor			
Never known to have happened, but	1	A pathway to allow for the impact to occur is never	1	The receptor is never	1
may happen		available		available	
Known to happen in industry	2	A pathway to allow for the impact to occur is almost	2	The receptor is almost	2
		never available		never available	
< once a year	3	A pathway to allow for the impact to occur is	3	The receptor is sometimes	3
		sometimes available		available	
Once per year to up to once per	4	A pathway to allow for the impact to occur is almost	4	The receptor is almost	4
month		always available		always available	
Once a month - Continuous	5	A pathway to allow for the impact to occur is always	5	The receptor is always	5
		available		available	

Step 1: Determine the PROBABILITY of the impact by calculating the average between the Frequency of the Aspect, the Availability of a pathway to the receptor and the availability of the receptor.

Table 41: Determination of Magnitude of impact

Source								Receptor			
Duration of impact	Score	Extent	Score	Volume / Quantity / Intensity	Score	Toxicity / Destruction Effect	Score	Reversibility	Score	Sensitivity of environmental component	Score
Lasting days to a month	1	Effect limited to the site. (metres);	1	Very small quantities / volumes / intensity (e.g. < 50L or < 1Ha)	1	Non toxic (e.g. water) / Very low potential to create damage or destruction to the environment	1	Bio-physical and/or social functions and/or processes will remain unaltered.	1	Current environmental component(s) are largely disturbed from the natural state. Receptor of low significance / sensitivity	1
Lasting 1 month to 1 year	2	Effect limited to the activity and its immediate surroundings. (tens of metres)	2	Small quantities / volumes / intensity (e.g. 50L to 210L or 1Ha to 5Ha)	2	Slightly toxic / Harmful (e.g. diluted brine) / Low potential to create damage or destruction to the environment	2	Bio-physical and/or social functions and/or processes might be negligibly altered or enhanced / Still reversible	2	Current environmental component(s) are moderately disturbed from the natural state. No environmentally sensitive components.	2
Lasting 1 – 5 years	3	Impacts on extended area beyond site boundary	3	Moderate quantities / volumes / intensity (e.g.	3	Moderately toxic (e.g. slimes) Potential to create damage or	3	Bio-physical and/or social functions and/or processes might be notably altered or	3	Current environmental component(s) are a mix of disturbed	3



Source								Receptor			
Duration of impact	Score	Extent	Score	Volume / Quantity / Intensity	Score	Toxicity / Destruction Effect	Score	Reversibility	Score	Sensitivity of environmental	Score
				_				1/5 1/1		component	
		(hundreds of		> 210 L <		destruction to the		enhanced / Partially		and undisturbed	
		metres)		5000L or 5 –		environment		reversible		areas.	
				8Ha)						Area with some	
										environmental	
										sensitivity (scarce	
										/ valuable	
										environment etc.).	
Lasting 5	4	Impact on	4	Very large	4	Toxic (e.g. diesel &	4	Bio-physical and/or social	4	Current	4
years to Life		local scale /		quantities /		Sodium Hydroxide)		functions and/or		environmental	
of		adjacent		volumes /				processes might be		component(s) are	
Organisation		sites (km's)		intensity (e.g.				considerably altered or		in a natural state.	
				5000 L –				enhanced / potentially		Environmentally	
				10 000L or				irreversible		sensitive	
				8Ha- 12Ha)						environment /	
										receptor	
										(endangered	
										species / habitats	
										etc.).	
Beyond life	5	Extends	5	Very large	5	Highly toxic (e.g.	5	Bio-physical and/or social	5	Current	5
of		widely		quantities /		arsenic or TCE)		functions and/or		environmental	
Organisation		(nationally or		volumes /				processes might be		component(s) are	
/ Permanent		globally)		intensity (e.g.				severely/substantially		in a pristine	
impacts				> 10 000 L or				altered or enhanced /		natural state.	
				> 12Ha)				Irreversible			



Source						Receptor					
Duration of impact	Score	Extent	Score	Score Volume / Support   Quantity / Intensity		Score Toxicity / Destruction Effect		Reversibility	Score	Sensitivity of environmental component	Score
										Highly Sensitive area (endangered species, wetlands, protected habitats etc.)	

Step 2: Determine the MAGNITUDE of the impact by calculating the average of the factors above.

Table 42: Determination of Severity of impact

Environmental Impact Rating / Priority													
			Magnitude										
Probability	1	2	3	4	5								
FIODADIIIty	Minor	Low	Medium	High	Major								
5	Low	Medium	High	High	High								
Almost Certain	LOW	Mediairi	riigii	riigii	riigii								
4	Low	Medium	High	High	High								
Likely	LOW	Mediaiii	riigii	riigii	riigii								
3	Low	Medium	Medium	High	High								
Possible	LOW	Mediairi	Wediaiii	riigii	riigii								
2	Low	Low	Medium	Medium	High								
Unlikely	LOW	LOW	Wediam	Wediaiii	riigii								
1	Low	Low	Low	Medium	Medium								
Rare	LOW	LOW	LOW	Wediaiii	Medium								

Step 3: Determine the SEVERITY of the impact by plotting the averages that were obtained above for Probability and Magnitude



#### 4.2 Impacts identified

In discussing the impacts associated with the unlawful road construction, an approach has been followed to categorise impacts based on phase of activity. As can be noted in the table below, construction and operational activities were undertaken during similar time periods. As indicated by Aquila Steel, construction activities have ceased, but operational activities may continue based on the outcome of the Section 24G Rectification Application.

#### **PHASE DURATION**

Construction

September 2007 January 2014.

Construction activities have ceased.

#### **ACTIVITY DESCRIPTION**

- Civil Blasting activities for the establishment of roads. As per information provided by Aquila Steel, blasting activities were undertaken during the following months: Nov 2007; Nov 2008; Dec 2008; Jun 2010; Sep 2010; Nov 2010; Mar 2011; Apr 2011; May 2011; Jun 2011; Sep 2011. A total of 12 blasts (7 of these associated with road construction and a further 5 to release drill rods that were stuck).
- Establishment of gravel roads that included vegetation clearance (including trees); removal and stockpiling of topsoil; and grading of roads. All road construction activities were undertaken during daytime hours. Total disturbance associated with unlawful development is given below:

Existing farm roads widened	11.65 km
Construction of roads (partially rehabilitated):	1.95 km
Construction of roads (still in use)	19.29 km
TOTAL	32.89 km

This rectification application is for the total constructed road length of 32.89 km, with a total surface area disturbance of 33 ha. The section of road shown as "partially rehabilitated" above, still needs to meet rehabilitation requirements applicable to all roads (as per the mitigation measures specified within this report).

- · Road construction activities also interfered with a number of nonperennial drainage lines.
- Fuel required for road construction (graders) was supplied via a 1 000l diesel bowser (tank on a trailer). The tank was filled in town (Thabazimbi) and delivered to site for refueling as required.
- Abstraction of water from boreholes for prospecting activities (including for dust suppression purposes) occurred.
- September 2007 up until Utilisation and maintenance of gravel roads. This includes all transportation activities on the road. Light utility vehicles (bakkies) travelling on gravel roads: approximately 4 trips per day. All road use and prospecting activities are undertaken

Operation

Closure.



Operational activities have temporarily ceased, pending the outcome from the Section 24G Rectification Application.

Aquila Steel has indicated that further prospecting will likely not continue).

during daytime hours. As confirmed by Aquila Steel, no lighting is provided on site as no activities are undertaken after dark.

Closure

Not yet undertaken.

Rehabilitation of roads: No rehabilitation of roads has been completed (even portion of road reflected as "partially rehabilitated"). This will only occur on completion of prospecting activities. Aquila Steel is also in process of applying for a mining right (and supporting EIA) for the area where prospecting is being undertaken. Should a mining license be granted, roads will be utilised (and upgraded) as part of the mining operations, with rehabilitation covered during and after Life of Mine.

In identifying suitable mitigation for impact arising from each identified activity, the following has to be considered:

- The extent and duration of the activity (e.g. will the activity continue),
- The significance and duration of the impact (e.g. will impact continue after activity has ceased)
- The reversibility of the impact (i.e. can mitigation eliminate impact and restore damage and to what extent).

The suitability and feasibility of all proposed mitigation measures are thus included in the assessment of significant impacts, also providing a comparison of the significance of the impact before and after the proposed mitigation measure is implemented. Please note that the risk rating after mitigation is an indication of the expected or anticipated significance of the impacts, assuming that all proposed mitigation measures are implemented in a correct and thorough manner and are maintained for the duration of the specific phase, such as for the entire Operational Phase.

Specialist assessment are key in identifying activities that may result in impact, the significance of the impacts arising from these activities and in recommending mitigation measures. The various specialist reports have been applied in compiling the risk assessments for construction, operation and closure phases of the unlawful activities as provided below. Detail specialist reports are attached to this Section 24G EIR as Appendix F.

This sections below provide detail impact assessments as categorised under the various environmental components, and through assessing the various aspects that may result in environmental impact.



# 4.2.1 Air Quality

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	(bef		nting	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	(afte	rating r pation)
	Probability	Magnitude	Severity					Probability	Magnitude Severity
ENVIRONMENTAL COMPONENT: Air quality									
ACTIVITY: Undertaking of 12 blasts; and the construction of 33km prospecting roads resulting	ing in a	a surfa	ace di	isturbance of 33ha (width of r	oad average 10m). This further included activities of land clearing, topsoil	removal, material lo	pading and hauling,	topsoil	removal,
stockpiling, road grading, compaction, etc.									
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure									
Impact description: Direct, negative impacts: Dust fallout impacts relate to nuisance impacts,	5	1	L	Activities remain compliant	Degree to which impact can be reversed: As soon as the dust generating			5	1 L
i.e. reduced visibility and layers of dust deposited on the surrounding environment.				with air quality legislation.	activities ceased the air quality impact on the surrounding population and				
PM <sub>2.5</sub> and PM <sub>10</sub> impacts can in general be of concern due to their direct health impact				To further	environment will have improved and the impacts would be easily				
potentials. Such fine particles are able to be deposited in, and damaging to, the lower airways				eliminate/minimise the	reversible.				
and gas-exchanging portions of the lung.				risks of nuisance impacts					
Analysis of the results from dustfall monitoring undertaken for the period June 2011 to				and direct health impact	Proposed mitigation:				
November 2013 revealed that values were well within proposed residential limits throughout				potential.	Due to the low significance of impact on air quality, the air quality				
the monitoring period. In general, values were found to be indicative of pristine background					specialist did not propose mitigation measures for the exploration				
conditions.					activities.				
Extent of impact: Site-specific. Identified impacts are likely to have been confined to the site.									
<u>Duration of impact</u> : Short-term (0-7) years – Between 2007 and 2013 (Time period during									
which prospecting occurred.									
Degree to which impact has caused irreplaceable loss: None									

# 4.2.2 Aquatic and surface water

# 4.2.2.1 Receiving surface environment (impacts resulting from erosion and loss of catchment)

Environmental impact, extent, duration, significance and degree to which impact has	Risk	ratir	ng	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(befo	re			mitigatory action plan			(after	r
	mitig	ation)						mitig	ation)
	>	(D)						>	(1)
	bilit	itude	<u>.</u>					bilit	itude
	robability	Magnitude	Severity					Probability	Magnitude Severity
ENVIRONMENTAL COMPONENT: Aquatic and surface water	<u> </u>	≥   (	<u>ഗ്  </u>					<u> </u>	<u>≥                                     </u>
ENVIRONMENTAL COMPONENT. Aqualic and surface water									
ACTIVITY: Establishment of gravel roads crossing the drainage lines									
PROJECT PHASE APPLICABILITY: Construction; Operation									
Impact description:	4	2 N	M	To conserve the surface	Proposed mitigation:			4	1 L
Numerous drainage lines occur from the higher peaks in the north-eastern parts of the site				water environment and	1. The necessary culverts need to be put in place to facilitate the	Prior to wet	Aquila Steel		
and flows down towards the Sand River south of the site The gravel roads crosses the natural				prevent impact to	flowing of water underneath the roads. The following needs to be	season (2014)	Management		
drainage lines, causing an impact on surface water quality and surface water flow patterns.				downstream water users	considered:				
A change in surface water flow patterns may impact on catchment yield, affecting the surface					Undersized and poorly placed culverts can cause problems for				
water quantity for downstream users.					water quality and aquatic organisms.				
Increase in surface water flow from the road may cause erosion hereby increasing the					Poorly designed culverts are also more apt to become jammed with				
amount of sediments found in the water impacting on the water quality for nearby users.					sediment and debris during medium to large scale rain events. If				
Impact is low to intermediate. Siltation and sedimentation into rivers would lead to loss of					the culvert cannot pass the water volume in the stream, the water				
fish habitat and fish biodiversity.					may overflow over the road embankment. This may cause				
					significant erosion, washing out the culvert. The embankment				
Extent of impact: Impact onto Sand River.					material that is washed away can clog other structures				
					downstream, causing them to fail as well. It can also damage crops				
Duration of impact: Commencing during construction phase that could be beyond life of					and property. A properly sized structure and hard bank armoring				
activity if mitigation measures are not taken.					can help to alleviate this pressure.				
					Installation, modification, and improvements of culverts should be				
Degree to which impact has caused irreplaceable loss: No					done when stream flows and expectancy of rain are low. Ideally,				
					the entire installation process, from beginning to end, should be				
					completed before the next rain event. All existing and/or reasonable				
					potential stream flows should be diverted while the culvert is being				
					installed. This will help reduce or avoid sedimentation below the				
					installation site.				
					When installing culverts for stream crossings, seek to maintain the				
					original and natural full bank capacity (cross-sectional area) of the				
					channel. Constrictions at these points are contributing factors in				
					costly bridge and culvert "blow-outs" which generate a large volume				
					of sediment deposited directly into the stream. Align and center the				
					culvert with the existing stream channel whenever possible. As a				
					minimum, align the culvert with the center of the channel				

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risl (bef	c ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	Risk (afte	rat er	ing
	,	gatior	1)						gation	)
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
					immediately downstream of the outlet. If channel excavation is required to help align the culvert, it is frequently best to excavate the upstream channel to fit the culvert entrance and align the outlet with the existing natural channel. Minimal disturbance of the channel at the culvert outlet should be the priority consideration. Inasmuch as possible, the grade of culverts should be determined by the grade of the existing channel, but usually not less than 0.5% nor more than 1%. The outlet should discharge at the existing channel bottom. A professional engineer, experienced in hydrology and culvert hydraulics, should be consulted for determination of actual culvert grades when dealing with peculiar alignment or laying conditions, and upon any deviation from normal and usual installation procedures. Keep disturbance of the channel bottom, sides, adjacent land, and surrounding natural landscape to a minimum during installation. Install energy dissipating structures and/or armor at the outlet where scour and erosion are likely to occur from high exit velocity due to steep culvert installation, near proximity to channel banks, drops at the end of the culvert, etc. Establish and maintain at least one foot of road bed cover over all culverts. Two feet or more cover is the desired optimum.  • One method to account for all culverts is to maintain an inventory of culverts and under-drains and use a checklist from this inventory to account for culverts during inspections. Inspect culverts often, especially before the wet season, and after storm events, checking them for signs of corrosion, joint separation, bottom sag, pipe blockage, piping, fill settling, cavitation of fill (sinkhole), sediment buildup within the culvert, effectiveness of the present inlet/outlet inverts, etc. Check inlet and outlet channels for signs of scour, degradation, debris, channel blockage, diversion of flow, bank and other erosion, flooding, etc. Practice preventive maintenance to avoid clogging of pipes and other situations which may damage	During construction and operation	ECO			



Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	(bef			Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	(afte	c ra	
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
					criteria may adversely affect the established stability of the ditch, stream, and/or roadway.  2. Measures to manage erosion:  • The condition of all the gravel road areas must be monitored for potential water runoff and erosion, especially during the rainy season.  • The development of erosion gullies shall be prevented as far as possible. If this cannot be prevented, such gullies shall be stabilized(e.g. stabalise gully heads). The measures used to control, improve or obliterate gullies depend on the size of the gully, its slope and its drainage area.  • Erosion of gravel roads should be further addressed by implementing energy dissipaters to drain surface runoff away from the roads into the adjacent veldt areas.  3. Monitor effectiveness of mitigation measures:  • Implement a surface water (monthly) and bio-monitoring programme within the receiving surface water environment (Sand River).	Operational phase	ECO			
						Operational phase	Aquila Steel Management			

# 4.2.2.2 Riparian Vegetation

Environmental impact, extent, duration, significance and degree to which impact has	Risk ratin	Environmental objective	Degree to which impact can be re	eversed and the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(before		mitigatory action plan				(after	
	mitigation)						mitiga	tion)
	Probability Magnitude						abili :	Magnitude Severity
ENVIRONMENTAL COMPONENT: Aquatic and surface water							. — .	



Environmental impact, extent, duration, significance and degree to which impact has	Risk	rati	ing	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibilit	y R	isk	rating
caused irreplaceable loss	(befo	re			mitigatory action plan			(a	after	
	mitig	ation)	)					m	nitiga	ation)
	Probability	/agnitude	Severity					Probability	: :	Magnitude Severity
ACTIVITY: Establishment of gravel roads crossing the drainage lines	ш ,		0)				1		_   4	2   0)
PROJECT PHASE APPLICABILITY: Construction; Operation										
Impact description: Although the road laying has resulted in the removal of vegetation,	4	2	М	To conserve the surface	Proposed mitigation:			4	2	2 M
the riparian zones have been minimally affected.				water environment and	1. Do not establishment any new roads as part of the prospecting.	Immediate	Aquila Ste	eel		
				prevent impact to	2. The rehabilitation of the section of road adjacent (to the west) of the	Closure Phase	Management			
Extent of impact: Site				downstream water users	riparian zone (Refer Figure 48) should be rehabilitated under the					
					guidance of a specialist botanist or ecologist with the same type of					
<u>Duration of impact</u> : Permanent					vegetation as found in the adjacent riparian zone.					
					If drainage lines are crossed by roads that are no longer in use they					
<u>Degree to which impact has caused irreplaceable loss</u> : This habitat is difficult to rehabilitate,					are to be rehabilitated to their natural state in order for the natural					
meaning that the duration is likely to be long-term to permanent.					water flow routes to be reinstated, in order for the historical supply					
					of water to remain within/ be returned to the riparian zones.					
					3. Culverts installation to ensure return of natural flow patterns will	Prior to wet	Aquila Ste	el		
					allow for the re-growth of riparian vegetation.	season	Management			

# 4.2.2.3 Mountain spring

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	(befo		ting	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsib		(afte	rating ation)
	Probability	Magnitude	Severity						Probability	Magnitude Severity
ENVIRONMENTAL COMPONENT: Aquatic and surface water										
ACTIVITY: Establishment of gravel roads crossing the drainage lines										
PROJECT PHASE APPLICABILITY: Construction; Operation										
Impact description: Alteration to the hydrology/geomorphology of the mountain spring.	2	1	L	To conserve the surface	Proposed mitigation:				2	1 L
The riparian zone supported by the freshwater mountain spring has been closely hugged by				water environment and	No future infrastructure establishment to be conducted within the 100m	Immediate	Aquila	Steel		
a prospecting road				prevent impact to	mountain spring riparian buffer zone.		Manageme	nt		
				downstream water users						
Extent of impact: Local										



Environmental impact, extent, duration, significance and degree to which impact has	Risk	c ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rating	3
caused irreplaceable loss	(bef	ore			mitigatory action plan			(after		
	miti	gatio	า)					mitiga	ation)	
	Probability	Magnitude	Severity						Magnitude Severity	
Duration of impact: Permanent										
<u>Degree to which impact has caused irreplaceable loss</u> : No discernible impacts on the spring have been identified.										

# 4.2.3 Cultural Heritage

# 4.2.3.1 Anthropology

Environmental impact, extent, duration, significance and degree to which impact has	Risl	c ra	ating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	c ra	ating
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	er	
	miti	gatio	n)					mitig	gatio	n)
		<u>o</u>		-				<u>&gt;</u>	Ф	
	abili	nituo	rity					abili	nituo	rity
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Anthropology			1 0)					1 1		
<b>ACTIVITY:</b> Construction of 33 km roads constructed, with approximately 33ha disturbance.	Also 1	2 bla	sts do	one during the same period (20	007 – 2013).					
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure										
Impact description:	5	5	Н	To preserve the cultural	Degree to which impact can be reversed: The physical impact on the			5	4	Н
In section 3.5 FEAR OF MINING INTERVENTION of the report "Cultural Heritage of the				heritage of the Madimatla	area around Madimatla is irreversible.					27
Madimatla Cave and Surrounding Area: An Anthropological Perspective", the following is				Cave and surrounding	It is recommended that Aquila Steel meet and arrange site visits with					
stated:				area	representatives of the healers. Aquila Steel needs to win the trust of the					
'The healers in particular fear that the cave and the landscape will 'suffocate' in the advance					healers.					
of the harsh mining developments around Madimatla. They base their fears on experiences										
elsewhere where scared sites were destroyed.					Proposed mitigation:					
					1. The first important step is to declare the Madimatle site a provincial or	Operational	Aquila Steel			
Madimatle and its surroundings have always been known to be a site of tranquillity and					national heritage site. The site is at least of provincial importance in	Phase	Management			
quietness; a fitting environment in which to communicate with the ancestral world. The					this case the Limpopo Province. It is anticipated that the declaration					
					of Madimatle as heritage site would be to the best interest of the					

<sup>&</sup>lt;sup>27</sup> The anthropologist indicated that once all the representatives of the healers are accommodated by Aquila Steel by means of site and other meetings, during which their fears are properly addressed, and they are kept up to date with continuous developments around Madimatla, and as long as the lines of communication are kept open and maintained on a regular basis, the risk rating might be reduced further.



Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	(bef	Risk rating		Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	(afte	c ra er gatio	
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
integrity of the audibility factor (e.g. noises belonging to the ancestral village) will forever be			0)		traditional healer community and other heritage stakeholders, local			ш.		U)
risked once mining activities commence.					government and any development action such as mining.				ı	
					2. In the interim the management of the site should be regarded as a	Operational	Aquila Steel		ı	
As illustrated earlier traditional healers maintain close interaction with their natural					matter of urgency considering the fears which are expressed by the	Phase	Management		ı	
environment as far as the sourcing of their materia medica is concerned. There is the					healers (compare Equiperspectives Research & Consultation				ı	
lingering fear that mining extensions around Madimatla will threaten the natural environment.					Services 2014). Suggestions such as a perimeter fence, proper				ı	
					security and access control should be considered. The following				ı	
Mining on a specific site implies an increase of people and the moving around of mining staff					suggested measures are put forward by the healers. From both an				ı	
which will bring an end to the privacy of the cave. Healers generally work in privacy and away					anthropological and heritage perspective the anthropologist is				ı	
from the public. This privacy of the healer is understood and respected by all community					convinced that most of these suggestions are workable and must be				ı	
members'.					investigated. Not all the suggestions as contained below are put forward as				ı	
					mitigation. However, these suggesions must be further investigated by Auila				ı	
During interviews on 29 March 2014 the healers were adamant that they do not 'trust' Aquila					Steel and will also require further negotiations with the healers. In finalising				ı	
Steel and associate contracting agencies not only based on experiences with mining					suitable mitigation, the preservation of the cultural heritage must remain a				ı	
intervention elsewhere, but on proven evidence of what interventions and disturbances have					priority:				ı	
already transpired around Madimatla. Not since 2011 have the true healers been briefed at					The construction of a perimeter fence which includes the cave and				ı	
any stage on what the impact of the exploration intervention would entail.					its surrounding landscape as well as the original access footpaths,				ı	
					naturally formed air vents (chimneys) and other concealed				ı	
1 The noise levels of exploration vehicle traffic have concerned them for some time. The					entrances is a priority. The healers know the location of these sites				ı	
possibility of any noise impact was never communicated to them during meetings or in written					and will be able to indicate these. They will also assist with the				ı	
form.					demarcation of the fence.				ı	
2 The impact of the road infrastructure caused by the exploration vehicles was not anticipated					Access control and security to Madimatle are some of the major				ı	
by people who have utilized the natural resources around Madimatla for decades.					concerns. At this stage the gate is not locked and although the				ı	
3 The pre-mining exploration has introduced 'strangers' to the area who forage around					signage warns of its importance anybody can enter the site. The				ı	
Madimatla for 'firewood' and 'something to hunt'. This is a reference to the contract					healers are in particular concerned about the littering problem.				ı	
employees of the exploration staff.					There is a suggestion that the current caretaker Mr. Mothloki control				ı	
4 Another issue which adds to the above is that Aquila Steel proceeded with the construction					the keys to the gate and at the same time exercise some form of				ı	
of the perimeter fence and access gate without consultation of the traditional healers.					access control and issue entrance permits.				ı	
					Towards the entrance of the cave the healers constructed a small				ı	
Extent of impact: The ethnographic record (1953, 1971) referred to the heritage importance					waiting and preparation enclosure where their healing medicines				ı	
of the Madimatle site. It is one of similar sites (e.g. Lôwe) in the Tswana oral record and					and goods can be left. In addition they plan to construct seven <sup>24</sup>				ı	
these sites are central in Tswana (Botswana and South Africa) creation mythology and they					small rondavel type houses or huts at specific places around the				ı	
have been known in Tswana oral tradition since the early mythological past.					enclosure. These houses ought to be built in Tswana EBT <sup>25</sup> style				ı	
					using only organic non-Western material such as mud, cow dung,				ı	
					grass, indigenous wood, etc. Each house (ntlo) will have a				ı	

<sup>&</sup>lt;sup>24</sup> The idea of seven structures is inspired by the origin myth that the genitor mother of the cave Maebena gave birth to seven children who became the founders of seven tribes. Among these tribes are the Kgatla, Hlalerwa (Babididi), Masilo Mabalingwe, Thlaping, Mokgatle, Phuthi and Tshwenye.



<sup>&</sup>lt;sup>25</sup> EBT=Earth Building Technology

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risk rating (before mitigation)			Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	(afte	c ratin er gation)	ig
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
Madimatle is central to the cosmological world of the Kgatla and neighbouring communities. The site boasts of a historical chronology of usage and it managed to maintain its importance in the ritual and religious world of these communities (compare Equiperspectives 2014:43, 53, 59-61).  Duration of impact: Permanent, commencing from time when prospecting activities and unlawful road construction commenced (2007)  Degree to which impact has caused irreplaceable loss: Apart from environmental disturbances caused by the road works, human movement and blasting the damage in the human relations domain might be difficult to restore.					courtyard enclosure (seotlwana) constructed from indigenous reeds (dithlaka). Each house will also have a specific user function which will be determined by the type of healer who visits the site. There will be a hut for the dingaka tsa ditaola (one with horns), one for the prophetic type of healers (bapororfeti), the sedupe category, the rain doctor (moroka wa pula) and others. The healers claim that they have the necessary indigenous knowledge to build these structures. They contend that such indigenous structures will honour and complement the sacredness of Madimatle and at the same time, appease the ancestors. It will also convey a significant message to the badimo that the healer practitioners are serious in their intentions to continue the use of the site in perpetuity and honour its true heritage. The traditionally built houses will also signify a return to the pre-colonial heritage of Madimatle.  The healers call upon the mining company Aquila Steel (S Africa) Proprietary Limited to provide the necessary resources for the development of the above mentioned structures as well as the perimeter fence. The company should also provide the transportation once the natural and other building materials have been identified and sourced. The mine should also undertake the construction of the perimeter fence, the clearance of old foot paths and assist with the construction of the traditional structures.  The healers insist that members of the original community who were relocated from the area close to Madimatle be recruited for the construction of the perimeter fence, the planned structures and others projects related to the development of Madimatle.  The healers referred to a landline (Telkom) telephone service near the cave and at the house of the current caretaker Mr. Mothloki which was suspended. They request that this service be restored, in order to maintain communication between the caretaker and would-be visitors.  Other demands: The healers allege that since the relocation of the original residents on the					

<sup>&</sup>lt;sup>26</sup> Aquila Steel indicated that the previous owner terminated the services of the staff.



Environmental impact, extent, duration, significance and degree to which impact has	Risk	rati	ng	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ting
caused irreplaceable loss	(befo	re			mitigatory action plan			(afte	r	
	mitig	ation)						mitig	gation	1)
		<u>e</u>							e	
	ability	/agnitude	rity					abilli	nituc	erity
	Prob	Magi	Seve					Probability	Magnitude	Seve
			0)		the necessary action as soon as possible. Most of these residents					0)
					were rendered unemployed, poor and destitute since the					
					relocation.					

# 4.2.3.2 Archaeology

Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation) <sup>28</sup>					mitigation)
ENVIRONMENTAL COMPONENT: Archaeological Heritage						
ACTIVITY: Construction of roads for prospecting purposes						
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure						
Site 1: Pereira grave	No impact	Identify, conserve and	Degree to which impact can be reversed: Not applicable			No impact
Field rating <sup>29</sup> : c. Local. This site is of field Rating/Grade IIIA significance. It should be		manage cultural resources				
retained as a heritage register site (high significance) and so mitigation as part of the			Proposed mitigation:		Aquila Steel	
development is not advised;			Contractor and mine staff to remain within designated areas.	Immediate	Management	
Statement of significance <sup>3</sup> : a. Its importance in the community, or patterns of South African			Develop an education programme informing staff and contractors of			
history.			the heritage importance and develop standards for site conduct			
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: No impact						
Degree to which impact has caused irreplaceable loss: Not applicable, as no impact						
Site 2: Gatkop Cave (Madimatla Cave)	High impact		Degree to which impact can be reversed: Negotiations is underway with			High impact <sup>30</sup>
Field rating: a. Provincial. This site is of field Rating/Grade II significance and should be			the Anthropologist (Prof. Van Vuuren) to bring parties to the table. There			
nominated as such.			is a significant degree of possibility to negotiate a solution on the impact			

<sup>&</sup>lt;sup>28</sup> The Heritage specialist felt that the risk rating methodology as applied should not be used, but instead a statement on significance be provided based on the rating according to SAHRA

<sup>&</sup>lt;sup>30</sup> The anthropologist indicated that once all the representatives of the healers are accommodated by Aquila Steel by means of site and other meetings, during which their fears are properly addressed, and they are kept up to date with continuous developments around Madimatla, and as long as the lines of communication are kept open and maintained on a regular basis, the risk rating might be reduced.



<sup>&</sup>lt;sup>29</sup> Rating according SAHRA: Minimum Standards May 2007.

Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation) <sup>28</sup>					mitigation)
Statement of significance: a. Its importance in the community, or patterns of South African			Proposed mitigation:	Immediate	Aquila Steel	
history.			Refer Table 4.2.3.1 Anthropology		Management	
b. Its possession of uncommon, rare or endangered aspects of South Africa's natural or			Contractor and mine staff to remain within designated areas.			
cultural heritage.			Develop an education programme informing staff and contractors of			
c. Its importance in demonstrating the principal characteristics of a particular class of South			the heritage importance and develop standards for site conduct			
Africa's natural or cultural places or objects.						
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
h. Its strong or special association with the life or work of a person, group or organisation of						
importance in the history of South Africa.						
Impact description: The "official closure" of the site has created tension between the						
traditional healer community and Aquila Steel and the impact is of high significance (Also						
refer to Table 4.2.3.1 Anthropology and Table 4.2.14 Social)						
Degree to which impact has caused irreplaceable loss: This item has high probability to lead						
to irreplaceable loss if negotiators do not agree on a solution.						
Site 3a: Randstephne homestead	High impact		Degree to which impact can be reversed: Impacts can be reversed.			Low impact
Field rating: c. Local. This site is of field Rating/Grade IIIA significance. It should be retained						
as a heritage register site (High significance) and so mitigation as part of the development is			Proposed mitigation:	Immediate	Aquila Steel	
not advised.			Use for the site must be determined.		Management	
Statement of significance: a. Its importance in the community, or patterns of South African			2. This site must be submitted to a second stage Heritage study and			
history.			recommendations stemming therefrom be implemented.			
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: At present the site is neglected and in the process of "demolition by						
neglect".						
Degree to which impact has caused irreplaceable loss: If this situation is not addressed,						
Aquila Steel will be accountable under National Heritage Resources Act 25 of 1999						
Site 3b: Labourer' cemetery	High impact		Degree to which impact can be reversed: Impacts can be reversed,			Low impact
Field rating: d. Local. This site is of field Rating/Grade IIIB significance. It could be mitigated			through intervention.			
and (part) be retained as a heritage register site (High significance).						
Statement of significance: a. Its importance in the community, or patterns of South African			Proposed mitigation:			
history.			Identify the families and possibilities of relocation of the graves	Immediate	Aquila Steel	
g. Its strong or special association with a particular community or cultural group for social,			Undertake grave relocation		Management	
cultural or spiritual reasons.						
<u> </u>						



Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation) <sup>28</sup>					mitigation)
Impact description: At present the site is neglected and in the process of "demolition by						
neglect". Retention of graves in-site may initiate community demands and other social						
issues.						
Degree to which impact has caused irreplaceable loss: If this situation is not addressed,						
Aquila Steel will be accountable under National Heritage Resources Act 25 of 1999						
Site 4a: Later Iron Age cattle enclosure	None		Degree to which impact can be reversed: Not applicable as no impact			None
<b>Field rating:</b> "General protection" A (Field Rating IV A): this site should be mitigated before						
destruction.			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.			Develop an education programme informing staff and contractors of		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			the heritage importance and develop standards for site conduct			
natural or cultural heritage.						
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4b: Later Iron Age cattle enclosure	None		Degree to which impact can be reversed: Not applicable as no impact			None
Field rating: "General protection" A (Field Rating IV A): this site should be mitigated before	None		Begree to willer impact can be reversed. Not applicable as no impact			- None
destruction.			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.			Develop an education programme informing staff and contractors of		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			the heritage importance and develop standards for site conduct			
natural or cultural heritage.			and normage importance and develop etailed as it of the conduct			
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4c: Later Iron Age cattle enclosure	None		Degree to which impact can be reversed: Not applicable as no impact			None
Field rating: "General protection" A (Field Rating IV A): this site should be mitigated before						
destruction.			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.			Develop an education programme informing staff and contractors of		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			the heritage importance and develop standards for site conduct			
natural or cultural heritage.						



Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risk rating (before mitigation) <sup>28</sup>	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	Risk rating (after mitigation)
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4d: Later Iron Age cattle enclosure	None		Degree to which impact can be reversed: Not applicable as no impact			None
<b>Field rating:</b> "General protection" A (Field Rating IV A): this site should be mitigated before						
destruction.			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.			Develop an education programme informing staff and contractors of		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage.			the heritage importance and develop standards for site conduct			
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4e: Later Iron Age cattle enclosure	None		Degree to which impact can be reversed: Not applicable as no impact			None
<b>Field rating:</b> "General protection" A (Field Rating IV A): this site should be mitigated before						
destruction.			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.  c. Its potential to yield information that will contribute to an understanding of South Africa's			Develop an education programme informing staff and contractors of the heritage importance and develop standards for site conduct		Management	
natural or cultural heritage.			the hemage importance and develop standards for site conduct			
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
lana at da a sinti an Naga						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4f: Later Iron Age mine 1 (?)	None		Degree to which impact can be reversed: Not applicable as no impact			None
Field rating: "General protection" A (Field Rating IV A): this site should be mitigated before						
destruction.			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.			Develop an education programme informing staff and contractors of		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			the heritage importance and develop standards for site conduct			
natural or cultural heritage.						



Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation) <sup>28</sup>					mitigation)
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4g: Later Iron Age mine 2 (?)	None		Degree to which impact can be reversed: Not applicable as no impact			None
Field rating: "General protection" A (Field Rating IV A): this site should be mitigated before						
destruction.			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.			Develop an education programme informing staff and contractors of		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			the heritage importance and develop standards for site conduct			
natural or cultural heritage.						
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4h: Later Iron Age mine 3 (?)	None		Degree to which impact can be reversed: Not applicable as no impact			None
Field rating: "General protection" A (Field Rating IV A): this site should be mitigated before						
destruction.			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.			Develop an education programme informing staff and contractors of		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			the heritage importance and develop standards for site conduct			
natural or cultural heritage.						
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4i (a): Later Iron Age dwellings	High		Degree to which impact can be reversed: Second phase heritage study			Low
Field rating: "General protection" A (Field Rating IV A): this site should be mitigated before			must be undertaken to determine reversibility.			
destruction.						
Statement of significance: a. Its importance in the community, or patterns of South African			Proposed mitigation:	Immediate	Aquila Steel	
history.			The sites are individually not rare, or of outstanding quality, they are not		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			deemed to be particularly worthy of preservation on their own. But, the			
natural or cultural heritage.			information that can be retrieved from these sites as a collective is of			



invironmental impact, extent, duration, significance and degree to which impact h	s Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
aused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation) <sup>28</sup>					mitigation)
. Its strong or special association with a particular community or cultural group for soci	al,		special importance, as it has not yet been done so in the past by			
ultural or spiritual reasons.			archaeologists in the region.			
mpact description: Prospecting road passes through or near site, but impact not y	et		It is suggested that a full second phase study is undertaken to record and			
etermined. The sites are individually not rare, or of outstanding quality, they are not deem	ed		possibly date the sites through the carbon fourteen dating process. After			
be particularly worthy of preservation on their own.			such recording it will be possible to acquire demolition permits for the			
			individual sites.			
Degree to which impact has caused irreplaceable loss: Not known						
ite 4i (b): Later Iron Age dwellings	High		Degree to which impact can be reversed: Second phase heritage study			Low
ield rating: "General protection" A (Field Rating IV A): this site should be mitigated before	re		must be undertaken to determine reversibility.			
estruction.						
statement of significance: a. Its importance in the community, or patterns of South Afric	เท		Proposed mitigation:	Immediate	Aquila Steel	
istory.			The sites are individually not rare, or of outstanding quality, they are not		Management	
. Its potential to yield information that will contribute to an understanding of South Africa	's		deemed to be particularly worthy of preservation on their own. But, the			
atural or cultural heritage.			information that can be retrieved from these sites as a collective is of			
. Its strong or special association with a particular community or cultural group for soci	al,		special importance, as it has not yet been done so in the past by			
ultural or spiritual reasons.			archaeologists in the region.			
npact description: Prospecting road passes through or near site, but impact not	et		It is suggested that a full second phase study is undertaken to record and			
etermined. The sites are individually not rare, or of outstanding quality, they are not deem			possibly date the sites through the carbon fourteen dating process. After			
be particularly worthy of preservation on their own.			such recording it will be possible to acquire demolition permits for the			
			individual sites.			
Degree to which impact has caused irreplaceable loss: Not known						
ite 4j: Later Iron Age smelting site	High		Degree to which impact can be reversed: Second phase heritage study			Low
ield rating: "General protection" A (Field Rating IV A): this site should be mitigated before	re l		must be undertaken to determine reversibility.			
estruction.						
statement of significance: a. Its importance in the community, or patterns of South Afric	ın		Proposed mitigation:	Immediate	Aquila Steel	
istory.			The sites are individually not rare, or of outstanding quality, they are not		Management	
. Its potential to yield information that will contribute to an understanding of South Africa	's		deemed to be particularly worthy of preservation on their own. But, the			
atural or cultural heritage.			information that can be retrieved from these sites as a collective is of			
. Its strong or special association with a particular community or cultural group for soci	al,		special importance, as it has not yet been done so in the past by			
ultural or spiritual reasons.			archaeologists in the region.			
mpact description: Prospecting road passes through or near site, but impact not y	et		It is suggested that a full second phase study is undertaken to record and			
etermined. The sites are individually not rare, or of outstanding quality, they are not deem	ed		possibly date the sites through the carbon fourteen dating process. After			
be particularly worthy of preservation on their own.			such recording it will be possible to acquire demolition permits for the			
			individual sites.			
Degree to which impact has caused irreplaceable loss: Not known						
ite 4k: Later Iron Age cattle enclosure	None		Degree to which impact can be reversed: Not applicable as no impact			None



Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation) <sup>28</sup>					mitigation)
Field rating: "General protection" A (Field Rating IV A): this site should be mitigated before			Proposed mitigation:			
destruction.			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
Statement of significance: a. Its importance in the community, or patterns of South African			Develop an education programme informing staff and contractors of		Management	
history.			the heritage importance and develop standards for site conduct			
c. Its potential to yield information that will contribute to an understanding of South Africa's						
natural or cultural heritage.						
g. Its strong or special association with a particular community or cultural group for social,						
cultural or spiritual reasons.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						
Site 4I: Later Iron Age village	High		Degree to which impact can be reversed: Second phase heritage study			Low
Field rating: "General protection" A (Field Rating IV A): this site should be mitigated before			must be undertaken to determine reversibility.			
destruction.						
Statement of significance: a. Its importance in the community, or patterns of South African			Proposed mitigation:	Immediate	Aquila Steel	
history.			The sites are individually not rare, or of outstanding quality, they are not		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			deemed to be particularly worthy of preservation on their own. But, the			
natural or cultural heritage.			information that can be retrieved from these sites as a collective is of			
g. Its strong or special association with a particular community or cultural group for social,			special importance, as it has not yet been done so in the past by			
cultural or spiritual reasons.			archaeologists in the region.			
Impact description: Prospecting road passes through or near site, but impact not yet			It is suggested that a full second phase study is undertaken to record and			
determined. The sites are individually not rare, or of outstanding quality, they are not deemed			possibly date the sites through the carbon fourteen dating process. After			
to be particularly worthy of preservation on their own.			such recording it will be possible to acquire demolition permits for the			
			individual sites.			
Degree to which impact has caused irreplaceable loss: Not known						
Site 5: Bridge and weir	None		Degree to which impact can be reversed: Not applicable as no impact			None
Field rating: d. Local. This site is of field Rating/Grade IIIB significance. It could be mitigated						
and (part) be retained as a heritage register site (High significance)			Proposed mitigation:			
Statement of significance: a. Its importance in the community, or patterns of South African			Contractor and mine staff to remain within designated areas.	Immediate	Aquila Steel	
history.			Develop an education programme informing staff and contractors of		Management	
c. Its potential to yield information that will contribute to an understanding of South Africa's			the heritage importance and develop standards for site conduct			
natural or cultural heritage.						
Impact description: None						
Degree to which impact has caused irreplaceable loss: None						



#### 4.2.3.3 Palaeontology

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss  ENVIRONMENTAL COMPONENT: Palaeontology	(befo	gation <u>e</u>		Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	(aft		Severity (Severity)
ACTIVITY: Undertaking of 12 blasts; and the construction of 32.89 km prospecting roads rescompaction, etc.  PROJECT PHASE APPLICABILITY: Construction; Operation; Closure	sulting	in a sı	urfac	e disturbance of 33ha. This	further included activities of land clearing, topsoil removal, material loading	and hauling, topsoi	l removal, stockpilin	ig, roa	ad gra	ding,
Impact description: The prospecting area (and area applicable to unlawful road construction), is largely	2	2	L	Prevent impact on fossil heritage	Degree to which impact can be reversed: Impacts on fossil heritage are irreplaceable.			2	2	L
underlain by Precambrian marine sediments of the Transvaal Supergroup (Malmani Subgroup dolomites, Penge Formation ironstones) and also by continental red-beds of the younger Waterberg Group in the northeast. Bushveld Complex granites crop out in the eastern sector. These Precambrian bedrocks are extensively mantled with colluvial (slope) deposits and soil on low palaeontological sensitivity. Apart from microbial mats, fossils are unknown from the Waterberg Group, while granites are invariably unfossiliferous. The Penge Formation ironstones that are targeted for opencast iron ore mining are not known to contain macroscopic fossil remains, although microbial fossils are probably present. The Malmani Subgroup dolomites and associated sediments are well-known elsewhere for their stromatolite biotas (reef-like microbial mounds), and also contain a range of microfossils. However, these recessive-weathering carbonate rocks are generally poorly exposed in the study area and the stromatolites are of widespread occurrence. It is concluded that the prospecting area is of low palaeontological sensitivity.  The Gatkop Cave site on farm Randstephane 455 KQ lies <i>outside</i> the current prospecting and unlawful road construction area. Several dolomitic breccia units of various ages, degrees of cementation and sedimentary facies are exposed within the cave. They include horizons with a component of extraneous ( <i>i.e.</i> extra-cave) material such as ferruginous cave earth, gravel or soil. However, no occurrences of bone-bearing breccia were identified during a recent site visit (Almond 2012). Dolomitic host rocks of the Malmani Subgroup show here fine lamination but no well-developed stromatolitic domes or columns. It is concluded that the palaeontological sensitivity of the Gatkop Cave site is probably LOW. The site is situated some four kilometres SSW of the main iron ore prospecting area and over 600 m lower in elevation. Any unrecorded palaeontological heritage resources here are therefore unlikely to be directly or indirectly a	2	2			<ul> <li>Proposed mitigation: No specific mitigation measures are proposed by the specialist due to the overall significance of Low impact (for road construction activities)</li> <li>General management measures include the following:</li> <li>1. The ECO should be aware of the possibility of important fossils being present or unearthed on site and should monitor all substantial excavations into fresh (<i>i.e.</i> unweathered) sedimentary bedrock for fossil remains;</li> <li>2. In the case of any significant fossil finds (<i>e.g.</i> vertebrate teeth, bones, stromatolites) during construction, these should be safeguarded preferably <i>in situ</i> - and reported by the ECO as soon as possible to the relevant heritage management authority (South African Heritage Resources Agency. Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Phone: +27 (0)21 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that any appropriate mitigation by a palaeontological specialist can be considered and implemented, at the developer's expense;</li> <li>3. The palaeontologist concerned with mitigation work will need a valid collection permit from SAHRA. All work would have to conform to international best practice for palaeontological fieldwork and the study (<i>e.g.</i> data recording fossil collection and curation, final report) should adhere to the minimum standards for Phase 2 palaeontological studies recently published by SAHRA (2013).</li> </ul>	Operational Phase	ECO	2	2	L



Environmental impact, extent, duration, significance and degree to which impact has	Risk	c ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rat	ing
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	r	
	miti	gatior	1)					mitig	ation	)
		Φ						>	Φ	
	bilit	itud	ity					bilit	itud	iţ.
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
The overall impact significance of the prospecting and associated unlawful road construction,	<u> </u>	2	(I)						2	()
is considered to be LOW. Pending the discovery of substantial new fossil remains during										
development, no further specialist palaeontological studies or mitigation for this project are										
considered necessary.										
Further comments from blasting and vibration specialist, pertaining to risk of damage to										
breccia in Gatkop Cave: This material is considered soft to hard which makes it pretty difficult										
to blast – hard can mean very similar to that of quartz and there is indications that it can be										
as hard as 7 on the Moh's hardness scale - similar to quartz. Meaning it will not be easily										
broken. A significant amount of energy is required to break. The cave is far away from										
blasting and the expected levels is very low and not considered problematic. If we have										
specific stalactites in the cave, then a different picture but again the expected levels are very										
low.										
The breccia is present but as part of the cave structure. The whole cave has to be shaken to										
a point of total collapse in order to damage the breccia.										
Extent of impact: Restricted to the development footprint										
Duration of impact: Permanent										
Degree to which impact has caused irreplaceable loss: Low impact										

#### 4.2.4 Economic

Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation)					mitigation)
	> 0					>
	ability nitude					obability agnitude
	roba lagr					roba lagr

**ENVIRONMENTAL COMPONENT:** Economic (With consideration towards socio-economic)

**ACTIVITY:** Undertaking of 12 blasts; and the construction of 33km prospecting roads resulting in a surface disturbance of 33ha (width of road average 10m). This further included activities of land clearing, topsoil removal, material loading and hauling, topsoil removal, stockpiling, road grading, compaction, etc.



Environmental impact, extent, duration, significance and degree to which impact has	Risk	ratir	ng	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(bef	ore			mitigatory action plan			(after
	miti	gation)						mitigation)
	ity	de						de it
	Probability	nitu	erity					nitu nitu
	Prob	Magnitude	Severity					Probability Magnitude Severity
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure								
Impact description: The proposed mine already developed 32.5 ha of access roads to its	Wea	dalsa		A desirable future state for	Degree to which impact can be reversed: Economically this cannot be	I	I	Weakly
				human societies in which				
prospecting areas. In terms of an alternative land use analysis, this impact is very small given	posi	uve			reversed			positive
that 32.5 ha in an eco-agriculture context is not sufficient land to justify one agricultural				living conditions and	Droposed mitigation, Fooppriselly, there is no model to writing the			
employee. Although this amount of land can accommodate hospitality employees, this				resource-use meet human	Proposed mitigation: Economically there is no need to mitigate the			
consideration is not practical as the area is spread over 20 km and therefore not an economic				needs without	impact.			
production unit. Furthermore, the roads would not render the current direct farms impacted				undermining the				
economically unviable as it allows enough room to continue to use the impacted land				sustainability of natural				
economically. It may well have visual impacts on the farms being prospected and on				systems and the				
surrounding farms and visual impacts due not qualify as a reason to halt economic				environment, so that future				
development.				generations may also have				
One of the stakeholders indicated that the blasting could impact the breeding productivity of				their needs met.				
his game, but upon desk-top research it appears that there is little scientific evidence to								
support this claim.								
Extent of impact: Local economy								
Duration of impact: Commencing during construction phase that could be beyond life of								
activity (or when rehabilitation has been completed).								
Degree to which impact has caused irreplaceable loss: Economically the creation of roads								
would have created economic value add at the construction phase, thereafter in effect								
irreplaceable benefits were created.								
Because roads are major contributors to economic development it is conceivable that the								
roads created could well be used for other economic purposes if the mine does not continue.								
						1	1	



### 4.2.5 Fauna

#### 4.2.5.1 Habitat transformation due to road construction

Environmental impact, extent, duration, significance and degree to which impact has	Risk	ratin	ng	Environmental objectiv	ree to which im	npact can be reversed and the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(befo	re			igatory action plai	n			(afte	er
	mitiga	ation)							miti	gation)
	Probability	Magnitude	Severity						Probability	Magnitude Severity
ENVIRONMENTAL COMPONENT: Fauna										
ACTIVITY: Removal of natural vegetation during road construction (33 ha natural vegetation	n cleara	ınce) w	vith i	ncurred increased edge-e	nd potential loss of	ecosystem function				
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure										
Impact description: The impact has already occurred and will lead to:	3	4 <b>F</b>	-	To prevent th	ree to which im	npact can be reversed: If no mitigation is			3	3 M
• Displacement and isolation of habitat-specific and substrate-specific taxa (e.g.				destruction/loss	lemented, the impa	act will continue.				
Hadogenes scorpions and rupiculous reptile taxa);				ecosystem function an						
Increased differences in ambient temperatures caused by road warming and barrier				loss of faunal richness	posed mitigation:					
effects on dispersing invertebrates - increased edge-effects; and					Rehabilitation shoul	ld consider the removal of roads and rehabilitation	Closure Phase	Aquila Steel		
Decrease in functional processes such as pollination.					hereof to counter b	parrier effects.		Management		
Extent of impact: Effect limited to the activity and its immediate surroundings.  Duration of impact: Long-term and will last more than 5 years.					population dynamic ensure connectivity	vity to ensure ecological function and meta- cs. Identify corridors of sensitive habitat types to y - where no connectivity is possible, the barrier nould be "removed" through rehabilitation (e.g. roads).	Closure Phase	Aquila Steel Management		
Degree to which impact has caused irreplaceable loss: Not applicable, but if no mitigation					ntroduce a fire ma	anagement plan - consults a wildlife manager to	Operational	Aquila Steel		
is implemented, this may cause loss of ecological function.					Finally, the present dangerous snakes of the baserved during this safety concern the education of staff.	pilation of a fire management plan.  ence of venomous and therefore potentially (e.g. black mamba, snouted cobra, puff adder all is survey) on the property is a potential health and that should be addressed through appropriate filabourers that will operate on the property. The ebite as well as the first aid treatment of snake bite such a course.	Phase Operational Phase	Management Aquila Steel Management		

#### Use of roads creating noise disturbance 4.2.5.2

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	(bef	k rat ore gation		Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	(aft	k rat er igation	
	Probability	Magnitude	Severity					Probability	Magnitude	Savority
ENVIRONMENTAL COMPONENT: Fauna										
ACTIVITY: Road will lead to increased noise effect, thereby resulting in the displacement of	f wildli	fe								
PROJECT PHASE APPLICABILITY: Construction; Operation										
Impact description: Increased traffic, will lead to increased noise generation which will deter	3	3	M	To prevent the	Degree to which impact can be reversed: Effectively reversed if the			2	2	L
animals from utilising nearby resources.				displacement of taxa and	impacts are removed.					
However, displacement of large-bodied animals which require large home ranges will lead				loss of local biodiversity						
to excessive competition between conspesific species, resulting in potential conflict with					Proposed mitigation:	Operational	Aquila Steel			
neighbouring species or landowners.					Keep haul traffic to determined routes and keep the frequency of	Phase	Management			
					hauling predictable. During prospecting, road utilisation involves low					
Increased traffic noise and vibration will interfere with ability of ground-dwelling animals to					road utilisation, primarily restricted to light vehicle movement.					
detect potential predators or to escape predation.					Limit the road network and plan roads to cross the least number of					
					different habitat types - this will limit the richness of taxa that could					
Extent of impact: The effect will impact on the area at the road and the area beyond road					be affected by the impact.					
reserve.					Where possible restrict road use to daytime.					
					Allow movement of animals during operation and increase the					
<u>Duration of impact</u> : Long-term and for the duration of the project.					permeability of the affected area - possibilities will be the removal of					
					fence structures in close proximity to roads.					
$\underline{\text{Degree to which impact has caused irreplaceable loss}}; \ \text{Not applicable and regarded as}$					Allow for movement of small-bodied (and slow-moving) taxa by					
temporary (as long as the project is operational).					incorporating underpasses - this needs identification of "hotspot"					
					areas where a high probability of animal dispersal is anticipated.					

#### Use of roads causing road mortalities

Environmental impact, extent, duration, significance and degree to which impact has	Risk	rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rati	ing
caused irreplaceable loss	(before			mitigatory action plan			(afte	r	
	mitigati	ion)					mitig	gation	
	Probability Magnitude	Severity					Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Fauna									
ACTIVITY: Traffic could lead to increased road mortalities									
PROJECT PHASE APPLICABILITY: Construction; Operation									



Environmental impact, extent, duration, significance and degree to which impact has	Risl	k ra	ating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	y F	Risk	rat	ing
caused irreplaceable loss	(bef	ore			mitigatory action plan			(	after		
	miti	gatio	n)					n	nitiga	ation	
	Probability	Magnitude	Severity					-	Probability	Magnitude	Severity
Impact description: Increased traffic during prospecting will result in animal collisions and	3	3	M	To prevent collisions and	Degree to which impact can be reversed: Effectively reversed if the			2	2 2	2	L
road mortalities. The area is confined within a matrix of game farms with a high diversity of				road mortalities.	impacts are removed. The impact severity could be ameliorated by						
mammal and reptile taxa. Road utilisation is restricted primarily to daytime; most animals					mitigation.						
are nocturnal and the impact will be significantly reduced if night traffic is avoided.						Operational	Aquila Ste	el			
					Proposed mitigation:	Phase	Management	/			
Extent of impact: The effect will impact on the area at the road and the area beyond road					Limit traffic to daytime.		ECO				
reserve.					Introduce road calming structures (e.g. humps) and enforce speed						
					limit.						
<u>Duration of impact</u> : Long-term and for the duration of the project - the impact is definite.					Monitor road kills and create a database of species killed to identify						
					"hotspots" and to apply mitigation measures at these specific areas.						
Degree to which impact has caused irreplaceable loss: Not applicable and regarded as					Allow movement of animals and increase the permeability of the road						
temporary, due to low traffic movement,					network. Seek advice from ecologists on "target crossings" where						
					underpasses should be applied.						

### 4.2.5.4 **Lighting**

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	(befo	rating ation)  Severity	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	(afte	rating ration)	
ENVIRONMENTAL COMPONENT: Fauna	<u>  L  </u>	2   0)			<u> </u>	l	<u>C</u>	2   0	)
ACTIVITY: Outside lighting could attract animals and lead to disorientation and collision with	h struct	ures.							
PROJECT PHASE APPLICABILITY: Construction; Operation									
Impact description: Outside lighting attract nocturnal migrating birds and invertebrates,	2	2 L	To prevent disorientation	Degree to which impact can be reversed: Effectively reversed by proper			2	2 L	
thereby disrupting natural dispersal and possible collision with infrastructure. Prospecting			of migrating and nocturnal	installation and planning					
and associated road use has been restricted to daytime, and therefore the significance of			animals.						
the impact is expected to be low.				Proposed mitigation:	Operational	Aquila Steel			
				Limit haul traffic to daytime - most animals are nocturnal and the	Phase	Management /			
Extent of impact: No to low light intensity, not expected to beyond site boundary.				impact will be significantly reduced if night traffic is avoided.		ECO			
				Security lighting should make use of "down-lighting" as opposed to					
<u>Duration of impact</u> : As no lighting, not applicable.				"up-lighting".					
				Change the light spectrum of the light bulbs from white to yellow					
				(longer wave lengths) or blue-green hues.					



Environmental impact, extent, duration, significance and degree to which impact has	Risk	rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ratin	g
caused irreplaceable loss	(befo	re		mitigatory action plan			(after	r	
	mitiga	ation)					mitig	ation)	
	Probability	Magnitude Severity					Probability	Magnitude	Sevelity
Degree to which impact has caused irreplaceable loss: Not applicable and regarded as				Monitor accidents/collisions and take appropriate remedial action					
temporary (as long as the project is operational).				where accidents/collisions occur.					
				Avoid placement of lights near water sources where high concentrations of wildlife is expected.					

#### 4.2.6 Bats

#### 4.2.6.1 Increased vehicular activity at night

Environmental impact, extent, duration, significance and degree to which impact has	Risk	k ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	er
	miti	gatio	1)					mitig	gation)
		<u>e</u>						£	Φ
	robability	)ituc	rity					abili	nituc 
	rob	Magnitude	Severity					Probability	Magnitude Severity
ENVIRONMENTAL COMPONENT: Bats								<u>, L</u>	2   0)
ACTIVITY: Increased vehicular activity at night									
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure									
Impact description: Reduction in population size of species roosting in Gatkop31 cave due to	2	2	L	To minimise changes to	Degree to which impact can be reversed: Could be largely to entirely			1	2 L
collisions with vehicles.				and loss of habitat,	reversed if impact removed or mitigated, and the reduction in population				
				minimise changes to the	size incurred before that not at a level that the population cannot recover				
Extent of impact: Probably negligible given the distance of the new roads from the cave, and				bats commuting and	from, and if there would be no future re-colonization of the roost by the				
the traffic on these roads was mostly during the day.				foraging behavior, and	same bat species from other areas.				
				avoid unsustainable					
Duration of impact: Short-term (0-7) years - Between 2007 and 2013 (Time period during				increases in their mortality.	Proposed mitigation:	Operational	Aquila Steel		
which prospecting occurred.					Identify for the different cave dwelling bat species the important 'bat	Phase	Management /		
					road crossings' within the landscape. Currently a 600-1000 m stretch		ECO		
Degree to which impact has caused irreplaceable loss: Unlikely to have caused ar					of the main road in front of Gatkop Cave has been identified as a				
irreplaceable loss.					critical 'bat road crossing' for the Long-fingered Bat.				
					2. Monitor if reduced speeds of 10-15 km at these 'bat road crossings',				
					in the early evening, from sunset to two hours thereafter, between				
					November and March, will be sufficient to reduce collisions and				
					mortality of the bats.				

<sup>&</sup>lt;sup>31</sup> Cave is also known as Madimatla (Refer Anthropologist).



Environmental impact, extent, duration, significance and degree to which impact has	Risk	ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ting
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	r	
	miti	gation	1)					mitig	gatior	1)
	iiity	nde	>					iit ∠	nde	>
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
	Pro	⊠	Se		Should reduced speed not be sufficient in the identified areas, then			Pro	Ma	Se
					movement of large mine related vehicles should be stopped during					
					this period.					
					Alternatively, crossing structures that attempt to provide the linear					
					elements in the landscape that bats rely on for commuting along					
					existing routes, should be installed to allow the bats under or over					
					the road. Since the effectiveness of this suggested mitigation					
					measure is not known for the cave roosting species at Gatkop					
					Cave, well-designed monitoring of this mitigation is essential.					
					5. The distance between open water sources and busy roads should					
					be maximised.					
					6. On busy roads, lighting should not attract insects and bats, in order					
					to avoid collisions.					

#### 4.2.6.2 Removal of natural vegetation

Environmental impact, extent, duration, significance and degree to which impact has	Risk	ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ratin
caused irreplaceable loss	(befo	ore			mitigatory action plan			(after	
	mitig	gation	1)					mitiga	ition)
	<u></u>	e Q						≱ .	е
	abilli	nituc	rity					abilli	ritu rity
	Probability	Magnitude	Severity					Probability	Magnitude
ENVIRONMENTAL COMPONENT: Bats									_   0,
ACTIVITY: Removal of natural vegetation during road construction (33 ha natural vegetation	cleara	ınce),	there	eby incurring losses to foragin	g habitat and prey base				
PROJECT PHASE APPLICABILITY: Construction									
Impact description: Reduced access to natural foraging areas and food resources (insects)	2	2	L	To minimise changes to	Degree to which impact can be reversed: Could be largely, to entirely,			2 2	2 L
will negatively impact the fitness and survival of the cave dwelling bat species. Increased				and loss of habitat,	reversed if impact removed or mitigated, and the reduction in population				
stress to these species may also increase the risk of zoonotic disease outbreaks.				minimize changes to the	size incurred before that not at a level that the population cannot recover				
				bats commuting and	from, and if there would be no future re-colonization of the roost by the				
Extent of impact: Probably negligible, given the size of the area disturbed relative to the area				foraging behavior, and	same bat species from other areas.				
that was not disturbed.				avoid unsustainable		Operational	Aquila Steel		
that was not distanced.					1				
				increases in their mortality.	Proposed mitigation:	Phase	Management /		



Environmental impact, extent, duration, significance and degree to which impact has	Risk	rat	ing	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ing
caused irreplaceable loss	(befo	re			mitigatory action plan			(after	r	
	mitig	ation	)					mitig	gation	)
	robability	Magnitude	Severity					Probability	Magnitude	erity
	Pro	Mag	Sev					Pro	Мад	Sev
<u>Duration of impact</u> : Commencing during construction phase that would be beyond life of					1. Keep to a minimum the natural areas that are transformed or					
activity.					degraded, and do not attempt to transform the habitat to increase the					
					grazing value of the area (e.g. for rare ungulate breeding).					
Degree to which impact has caused irreplaceable loss: Unlikely to have caused an					2. Manage natural vegetation patches to maximize the vegetative					
irreplaceable loss.					biodiversity value, i.e. remove alien vegetation, and reduce the					
					collection of wood harvesting so that there is sufficient insect habitat					
					in the degrading biomass).					
					3. Introduce fire management. This will reduce the threat of intense					
					fires that could destroy natural woody vegetation, but will allow					
					nutrients accumulated in the dead biomass (e.g. phosphorus) to be					
					released back into the local environment.					

### 4.2.6.3 Blasting activities

Environmental impact, extent, duration, significance and degree to which impact has	Risk	c rat	ing	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(bef	ore			mitigatory action plan			(after	
	miti	gation	)					mitig	ation)
	Probability	Magnitude	Severity					Probability	Magnitude Severity
ENVIRONMENTAL COMPONENT: Bats			S					<u> </u>	≥   ഗ
ACTIVITY: Blasting activities – 12 civil blasts undertaken for road construction purposes									
PROJECT PHASE APPLICABILITY: Construction									
Impact description: Blasting may induce rock falls within the cave that compromise the roost	4	1	L	To minimise changes to	Degree to which impact can be reversed: If the roost space is not entirely			1	1 L
space, and, or kills roosting bats. Or, be a disturbance to the bats roosting in the cave, to the				and loss of habitat,	closed by damage to the cave, the impact could be largely, to entirely,				
degree it may reduce their survival or cause them to abandon the roost.				minimize changes to the	reversed if impact removed or mitigated, and the reduction in population				
				bats commuting and	size incurred before that not at a level that the population cannot recover				
Extent of impact: These impacts were probably negligible, given the distance from the cave				foraging behavior, and	from, and if there would be no future re-colonization of the roost by the				
roost.				avoid unsustainable	same bat species from other areas.				
				increases in their mortality.					
<u>Duration of impact</u> : During construction phase when blasting was done (2007 – 2013)					Proposed mitigation:	Applicable only	Aquila Steel		
						if further	Management		



Environmental impact, extent, duration, significance and degree to which impact has	Risk	rati	ing	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ting
caused irreplaceable loss	(befo	re			mitigatory action plan			(afte	r	
	mitig	ation)	)					mitig	gation	1)
	oility	nde:	≥					oility	nde:	≥
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
Degree to which impact has caused irreplaceable loss: Unlikely to have caused an			0)		1. Undertake a standardised monitoring program before, during and	blasting will be			_	0)
irreplaceable loss.					after blasting to assess the impact of blasting on the bats roosting in	done				
					the cave.					
					2. Blasting should not be undertaken during the <i>M. natalensis</i> maternity					
					period (between the last two weeks of October to the end of					
					February), pending an assessment of the impact on the bats roosting					
					in the cave at other times of the year.					
					3. If there are no adverse effects, blasting could be continued into the					
					M. natalensis maternity period together with associated monitoring.					
					4. Should any effects be noted then work practices must be modified to					
					minimize the risk of reoccurrence.					
					5. Should work practice modifications not alleviate the effects, than					
					blasting must be delayed until after the maternity / nursery period					
					(end of February).					

# 4.2.7 Cape Vulture (*Gyps coprotheres*)

#### 4.2.7.1 Land clearance for road construction

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risk rating (before mitigation)	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	Risk rating (after mitigation)
ENVIRONMENTAL COMPONENT: Cape Vulture	l	l .				
ACTIVITY: Land clearance for road construction						
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure						
Impact description:	Low	Prevent foraging habitat	Degree to which impact can be reversed: High degree of reversibility			Low
The impact is low, as there is little overlap between the vultures' main foraging area and		destruction.				
the project site – Refer discussions under Section 3.7.2.2. (Cape Vulture).			Proposed mitigation:			
			The significance of the impact is low, as at best the prospecting site is			
Degree to which impact has caused irreplaceable loss: Negligible			marginal foraging habitat and no mitigation measures are proposed			



# 4.2.7.2 Blasting

Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation)					mitigation)
ENVIRONMENTAL COMPONENT: Cape Vulture						
ACTIVITY: Blasting and grading for road construction						
PROJECT PHASE APPLICABILITY: Construction						
Impact description:	Low	Prevent damage to nesting	Degree to which impact can be reversed: High degree of reversibility, as			Low
The impact is low, as there is no indication that the construction of the roads had a negative		colony due to high air blast	no effect was observed.			
impact on the Kransberg Cape Vultures.		overpressure.				
			Proposed mitigation:			
Degree to which impact has caused irreplaceable loss: There is no indication that the			No mitigation measures have been proposed by the specialist. No			
activities negatively impacted the vultures.			further blasting will be undertaken			

#### 4.2.8 Flora

#### 4.2.8.1 Clearance of natural vegetation

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risk	(befo mitig on)	ore	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	e Responsibility	(aft		rating
	Probability	Magnitude	Severity				Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Flora									
ACTIVITY: Establishment/extension/maintenance of gravel roads that included vegetation (in	cludii	ng tree	) cle	arance, removal and stockpili	ng of topsoil, grading of roads and construction of safety berms.				
PROJECT PHASE APPLICABILITY: Construction; Operation									
Impact description: Loss of range-restricted habitat and increased fragmentation of sensitive	5	5	Н	To prevent the	Degree to which impact can be reversed: The impact is considered		5	5	Н
communities and threatened plant species (pertaining to Open Protea caffra - Loudetia				destruction/loss of plant	irreversible. Although the main impact has more relevance to				'
flavida savannoid grassland on mountain plateaus).				species	fragmentation and displacement of biota during operation, it is near-				
					impossible to revert the existing roads back to a composition that is				
The vegetation assessment also identified three protected tree species (Acacia erioloba					reminiscent of <i>Protea caffra – Loudetia flavida</i> savannoid grassland.				
(Mimosaceae) - Camel Thorn, Combretum imberbe (Combretaceae) - Leadwood,									
Sclerocarya birrea subsp. caffra (Anacardiaceae) - Marula, occurring widely throughout the					Proposed mitigation: The dominant floristic composition is highly Closure Pt	ase Aquila Steel	1		
contravened site. These trees were removed as part of vegetation clearance, without a					specialised and given the leached nature of the soil types and a	Management			
permit. A permit is required to remove or disturb a protected plant.					subsequent adaptation to a nutrient-poor system, recovery is likely to be				



Environmental impact, extent, duration, significance and degree to which impact has	Risl	k ra	iting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rat	ing
caused irreplaceable loss		(bef	ore		mitigatory action plan			(afte	r	
		miti	gati					mitig	gation	
		on)								
	<u>i</u>	de						<u>F</u>	ge	
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
	Pro	Mag	Sev					Pro	Має	Sev
The significance of the impact is high owing to the high species richness in the area and the					long-term if not impossible for assemblages pertaining to the Open <i>Protea</i>					
unique floristic composition.					caffra – Loudetia flavida savannoid grassland.					
Extent of impact: The impact is confined to 33ha of disturbance, therefore the extent of the					Refer discussions under Section 4.2.11 (Land use and capability) where					
impact will be local. However, the occurrence of a vulnerable fern species (second locality					mitigation through rehabilitation has been proposed, that will require the					
for Limpopo) increases the conservation importance of the site to be of national relevance.					appointment of a rehabilitation specialist to develop a rehabilitation plan.					
					However, this will likely not address the recovery of the range restricted					
<u>Duration of impact</u> : This habitat is difficult to rehabilitate, meaning that the duration is likely					habitat, sensitive communities and threatened plant species. flora					
to be long-term to permanent.					specialists registered with the South African Council for Natural Scientific					
					Professions with the relevant qualification and expertise must be					
Degree to which impact has caused irreplaceable loss: Although the impact has already					appointed to investigate ways to re-establish indigenous vegetation, and					
occurred (historical), the loss of habitat and loss of plant diversity are inevitable. Although					such recommendations to be included within the rehabilitation plan.					
the road network is gravel, it will allow certain small-bodied animals the opportunity to cross.										
However, the lost plant composition during the construction of these roads are irreplaceable										
and rehabilitation is not considered feasible.										
·	1	1					I .			

### 4.2.8.2 Loss of floristic diversity and invasion by alien/invader taxa

Environmental impact, extent, duration, significance and degree to which impact has	Risk	rat	ing	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(bef	ore			mitigatory action plan			(after	
	mitig	gation	)					mitigat	tion)
	Probability	Magnitude	Severity					Probability	Severity
ENVIRONMENTAL COMPONENT: Flora									
ACTIVITY: Establishment/extension/maintenance of gravel roads that included vegetation (in	ncludir	ng tree	e) clea	arance, removal and stockpili	ng of topsoil, grading of roads and construction of safety berms.				
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure									
Impact description: Invasive plants may establish due to surface area disturbance and also	3	3	М	To prevent the	Degree to which impact can be reversed: If no mitigation is implemented,			2 2	L
through future rehabilitation activities (e.g. seeding practices). This may lead to:				destruction/loss of plant	the impact may result in irreversible impact.				
Displacement of indigenous vegetation;				species					
Change in plant species composition;					Proposed mitigation:				
Change in vegetation composition and structure;					Implement an alien invasive and eradication procedure, covering the	Immediate	Aquila Steel		
Competition for sunlight and 'living space' will increase between indigenous and alien					following key elements:		Management		
species;									



Environmental impact, extent, duration, significance and degree to which impact has	Risk	rat	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra ra	ting
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	er	
	mitiq	gation	1)					miti	gatio	1)
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
Loss of habitat and a change in biodiversity.					Identification of species, through regular inspections and appropriate					
Change in flammability of existing vegetation structure – pending the introduction of the					recording thereof (to be done by flora specialist);					
alien species;					Method of removal, that will depend on category of identified species					
					and seasonal period when recorded;					
Extent of impact: The impact could spread beyond area of disturbance.					Any action taken to control and eradicate a listed invasive species					
					shall be executed with caution and in a manner that may cause the					
<u>Duration of impact</u> : Permanent					least possible harm to biodiversity and damage to the environment.					
					Future rehabilitation strategies must consider sensitivity of the fauna					
<u>Degree to which impact has caused irreplaceable loss</u> : Not applicable, but if no mitigation is					within the area, and prevent the introduction of species that may					
implemented, this may result in irreplaceable loss.					compromise the existing habitat and/or promote the establishment of					
					invader plants.					

## 4.2.9 Geohydrology

#### 4.2.9.1 Construction of roads

Environmental impact, extent, duration, significance and degree to which impact has	Risk	ratii	ng l	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	c ra	ating
caused irreplaceable loss	(befor	е			mitigatory action plan			(afte	er	
	mitiga	tion)						mitig	gation	n)
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Geohydrology										
ACTIVITY: Construction of 33 km of roads constructed (approximately 33ha disturbance).	Activitie	s would	d invol	lve vegetation clearance, to	psoil and sub-soil stripping and stockpiling.					
PROJECT PHASE APPLICABILITY: Construction										
Impact description: The stripping and stockpiling of topsoil and subsoil from the	2	2 L	L T	To minimise the extent of	Degree to which impact can be reversed: Not applicable since activity did			2	2	L
infrastructure surface areas is considered negligible since no chemical interaction is			(	disturbance of the aquifer.	not result in measurable groundwater impact					
envisaged that could have an adverse impact on groundwater quality. A slight increase in			-	To limit degeneration of						
the effective recharge can be expected.			9	groundwater quality.	Proposed mitigation: The geohydrologist did not propose any mitigation					
					as activities had insignificant groundwater impacts.					
Extent of impact: Negligible given the scale of the activity										
<u>Duration of impact</u> : Commencing during construction phase that could be beyond life of activity (or when rehabilitation has been completed).										

Environmental impact, extent, duration, significance and degree to which impact has	Risk	ratin	ng	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk ra	ating
caused irreplaceable loss	(before	)			mitigatory action plan			(after	
	mitiga	tion)						mitigation	n)
	ig	lagn	Severity					Probability Magnitude	Severity
Degree to which impact has caused irreplaceable loss: None as insignificant groundwater impacts									

### 4.2.9.2 Blasting activities

Environmental impact, extent, duration, significance and degree to which impact has	Risk	rati	ing	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ting
caused irreplaceable loss	(befo	re			mitigatory action plan			(afte	r	
	mitig	ation)	)					mitig	gatior	1)
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Geohydrology										
ACTIVITY: Approximately 12 blasting done for road construction and bulk sampling										
PROJECT PHASE APPLICABILITY: Construction										
Impact description: Blasting by means of nitrate based explosives may have significant	3	1	L	To minimise the extent of	Degree to which impact can be reversed: Not applicable since activity did			3	1	L
impacts on groundwater quality. However, the scale at which blasting took place was limited				disturbance of the aquifer.	not result in measurable groundwater impact					
to small areas, which did not lead to measurable groundwater impacts. No nitrate impact				To limit degeneration of						
was measured in groundwater of the lease area.				groundwater quality.	Proposed mitigation: The geohydrologist did not propose any mitigation					
					as activities had insignificant groundwater impacts.					
Extent of impact: Negligible given the scale of the activity										
<u>Duration of impact</u> : Commencing during construction phase that could be beyond life of activity.										
Degree to which impact has caused irreplaceable loss: None as insignificant groundwater impacts										



## 4.2.10 Geology

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risk (bef		ting	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	Risk (after		ting
	,	gation	1)					mitig		1)
	ity	de		-				ity	de	
	robability	Magnitude	Severity					Probability	Magnitude	Severity
	Pro	Ma	Se					Pro	Ma	Se
ENVIRONMENTAL COMPONENT: Geology										
ACTIVITY: Construction of prospecting roads, with undertaking of approximately 12 blasts;	Period	1 2007	- 20	13,						
PROJECT PHASE APPLICABILITY: Construction										
Impact description: The impact of the roads on the geology relates to the removal of the	2	2	L	Preserve and prevent the	Degree to which impact can be reversed: Irreversible but due to the scale			2	2	L
surficial/bedrock deposits through the removal/excavation/civil blasting that may lead to				sterilisation of natural	and significance thereof, of low impact					
impact on the transmissivity and hydraulic conductivity of rock, stability of rock, erosion and				resources.						
loss of geological resource. Due to the scale of the activities, the significance of the impact					Proposed mitigation: No mitigation proposed.					
is believed to be low. Bedrock geology is unlike to be affected by the activities.										
Extent of impact: Confined to site										
<u>Duration of impact</u> : During construction period (When blasting and road construction was										
undertaken)										
and oranger)										
Degree to which impact has caused irreplaceable loss: The impact will not be significant and										
therefore there should be no loss of resources.										

#### 4.2.11 Land use and capability

Environmental impact, extent, duration, significance and degree to which impact has	Risk r	rating	Environmental objective	Degree to which impact	ct can I	be reverse	d and th	e supporting	Timeframe	Responsibility	Risk	c ra	ting
caused irreplaceable loss	(before			mitigatory action plan							(afte	er	
	mitigation	on)									mitig	gation	)
	ability	erity									ability	itude	ity
	Probability Magnitude	Sever									Proba	Magnitud	Sever
ENVIRONMENTAL COMPONENT: Land use and capability													
ACTIVITY: Clearing of 33 ha of land for road construction													
PROJECT PHASE APPLICABILITY: Construction													

Environmental impact, extent, duration, significance and degree to which impact has	Risk	rat	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ting
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	r	
	mitig	gation	1)					mitig	gatior	1)
	rţ.	e e						-£	e	
	abilli	nituc	erity					abili	nituc	erity
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
Impact description: The land use and capability where the gravel roads have been	5	2	M	To protect the original	Degree to which impact can be reversed: The dominant floristic			5	2	M
established has been altered from game farming to being now used as access roads to the				land use of the	composition is highly specialised and given the leached nature of the soil					
exploration site. With further reference to economic impact (Section 4.2.4): The prospecting				prospecting right area	types and a subsequent adaptation to a nutrient-poor system, recovery					
activities already developed 32.5 ha of access roads to its prospecting areas. In terms of an					is likely to be long-term if not impossible for assemblages pertaining to					
alternative land use analysis, this impact is very small given that 32.5 ha in an eco-agriculture					the Open Protea caffra – Loudetia flavida savannoid grassland.					
context is not sufficient land to justify one agricultural employee. Although this amount of										
land can accommodate hospitality employees, this consideration is not practical as the area					Proposed mitigation:					
is spread over 20 km and therefore not an economic production unit. Furthermore, the roads					Rehabilitation should be conducted during the decommissioning and					
would not render the current direct farms impacted economically unviable as it allows enough					post closure phase with aim to return the land's capability back to its pre-					
room to continue to use the impacted land economically.					disturbed state (as per Flora specialist, this is unlikely to achieve).					
Extent of impact: Areas as disturbed.					1. A detailed plan with regards to rehabilitation of gravel roads must be	Operational	Aquila Steel			
					developed by a rehabilitation specialist registered at the South African	phase	Management /			
<u>Duration of impact</u> : Commencing at construction (2007) and extending beyond closure					Council for Natural Scientific Professions. The rehabilitation plan shall		Rehabilitation			
phase.					include the following:		specialist			
					Soil sourcing and usage,					
Degree to which impact has caused irreplaceable loss:					Vegetation establishment,					
Because roads are major contributors to economic development it is conceivable that the					Most suitable plant and seed mixtures to be utilised					
roads created could well be used for other economic purposes.					End land use requirements.					
					Long-term erosion prevention					
					Confirmatory monitoring					
					Security measures					
					2. The rehabilitation specialist <u>must</u> take the following in consideration	Operational	Aquila Steel			
					with respect to rehabilitation (and therefore important to consult with	phase	Management /			
					the various specialists):		Rehabilitation			
					Bats: Do not attempt to transform the habitat to increase the grazing		specialist			
					value of the area (e.g. for rare ungulate breeding).					
					Fauna: The dominant floristic composition is highly specialised and					
					given the leached nature of the soil types and a subsequent					
					adaptation to a nutrient-poor system, recovery is likely to be long-					
					term if not impossible for assemblages pertaining to the Open					
					Protea caffra – Loudetia flavida savannoid grassland.					
					3. A flora specialists registered with the South African Council for Natural	Operational	Aquila Steel			
					Scientific Professions with the relevant qualification and expertise	Phase	Management /			
					must be appointed to investigate ways to re-establish indigenous		, and agoing /			



Environmental impact, extent, duration, significance and degree to which impact has	Risk	ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	k r	ating
caused irreplaceable loss	(bef	ore gation	1)		mitigatory action plan			(afte		n)
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
					vegetation, and such recommendations to be included within the		Rehabilitation			0,2
					rehabilitation plan.		specialist			
					4. Vehicle access onto the rehabilitated area shall be limited in order to					
					avoid compaction. Rehabilitated areas shall be disturbed as little as	Closure Phase	Aquila Steel			
					possible, primarily by rehabilitation and maintenance equipment only.		Management			
					Vehicles speeds should be maintained to reduce the duration of					
					applied pressure.					
					5. Post rehabilitation monitoring must be implemented, to assess the					
					effectiveness of rehabilitation measures, and the need for further	Closure Phase	Aquila Steel			
					intervention.		Management /			
					During and after rehabilitation, colonisation of the disturbed areas		Rehabilitation			
					by plants species from the surrounding natural vegetation should		specialist			
					be monitored.					
					Monitoring of the rehabilitation success will take place for at least 5					
					years and will include corrective follow-up action. Access to					
					rehabilitated areas will be prevented until such time that					
					rehabilitation is successful.					

#### 4.2.12 Noise

### 4.2.12.1 Blasting

Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rati	ing
caused irreplaceable loss	(before		mitigatory action plan			(after	
	mitigation)					mitigation)	)
	> 0	-				> 0	
	Probability Magnitude Severity					Probability Magnitude	it.
	roba lagni ever					Probabil Magnitud	ver
	Pro Ma					Į Į Ž	Se
ENVIRONMENTAL COMPONENT: Noise							
ACTIVITY: Civil blasting for establishment of the road The blasting is small diameter, short b	last holes civil t	ype blasting operations					
PROJECT PHASE APPLICABILITY: Construction							



Environmental impact, extent, duration, significance and degree to which impact has	Risk	ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ting
caused irreplaceable loss	(befo				mitigatory action plan			(afte		
	mitig	gatior	n)					mitig	gation	1)
	iii t	nde	>					ility	nde	>
	robability	Magnitude	Severity					Probability	Magnitude	Severity
Impact description: As per the noise specialist report, the impact of these activities are not	4	2	N W	To prevent noise nuisance	Degree to which impact can be reversed Blasting was done for road			1	<u>Š</u>	L L
significant because of the absence of residence close to the activities., and based on the fact	.	_		to surrounding	development. The only possible reversal of impact is on the road					
that the activities are confined to the valley on the top of the mountain. However, no noise				environment	constructed itself. The road can be closed and rehabilitated (but no					
measurements were undertaken during times when blasting was undertaken (to allow for					reversal of impact on noise possible)					
quantitative statement), and therefore the above is a qualitative statement, based on the					,					
nature of the activity and the absence of residence close to the activities.					Proposed mitigation: No further blasting will be undertaken for road					
As per the blast specialist: There is a noise component from blasting apart from the air blast.					construction purposes, and the noise source has therefore been					
This noise is not normally part of the noise modelling as it is short period effect. We normally					removed.					
consider the effect from blasting as air blast and report as air blast and not noise. The noise										
component is the higher frequency effect than air blast.										
Extent of impact: As per the blast specialist: The blasting is confined to the road but the air										
blast and noise would have spread over the valley area. Intensity is debatable but expected										
to moderate to low at nearest structures. Maybe comparable with the Police test range.										
Duration of impact: During construction period (When blasting was undertaken)										
Degree to which impact has caused irreplaceable loss: The impact will not be significant and										
therefore there should be no loss of resources. As also stated in the economic study (4.2.4										
"One of the stakeholders indicated that the blasting could impact the breeding productivity of										
his game, but upon desk-top research it appears that there is little scientific evidence to										
support this claim."										
								1		

### 4.2.12.2 Grading and use of roads

Environmental impact, extent, duration, significance and degree to which impac	has Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation)					mitigation)
	<u></u>	_				de it
	ability nitude					abill rity
	robi Aagr					roba Nagr
ENVIRONMENTAL COMPONENT: Noise						<u> </u>
ENVIRONMENTAL COMPONENT: Noise						



ACTIVITY: Establishment/extension/maintenance of gravel roads. Travelling on roads (primarily light verticles travelling up and down the mountain.  PROJECT PHASE APPLICABILITY: Construction; Operation; Closure  Impact description: As per the noise specialist report, the impact of these activities are not significant because of the absence of residence close to the activities, and based on the fact that the activities are confined to the valley on the top of the mountain. Noise measurements were undertaken and light verticles were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Decree to which impact can be reversed As soon as the noise generating activities cease the noise impact on the surrounding population and environment will have improved and the impacts would be easily reversible.  Proposed militation:  Environmental militgation:  Environmental militgation:  Environmental militgation:  Environmental militgation:  Environmental militgation:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safet	Environmental impact, extent, duration, significance and degree to which impact has	Risk	c ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ting
ACTIVITY: Establishment/extension/maintenance of gravel roads. Travelling on roads (primarily light vehicles travelling up and down the mountain.  PROJECT PHASE APPLICABILITY: Construction; Operation; Closure  Impact description: As per the noise specialist report, the impact of these activities are not gispfilicant because of the absence of residence close to the activities, and based on the fact that the activities are confined to the valley on the top of the mountain. Noise measurements were undertaken and light vehicles were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact can be reversed As soon as the noise generating activities cease the noise impact on the surrounding population and environment will have improved and the impacts would be easily reversible.  Proposed mitigation:  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and the representative of the representative of the valley on the top of the mountain.  Peace to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Please of the absence of residence close to the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and	caused irreplaceable loss	`		า)		mitigatory action plan			(		n)
ACTIVITY: Establishment/extension/maintenance of gravel roads. Travelling on roads (primarily light vehicles travelling up and down the mountain.  PROJECT PHASE APPLICABILITY: Construction; Operation; Closure  Impact description: As per the noise specialist report, the impact of these activities are not gispfilicant because of the absence of residence close to the activities, and based on the fact that the activities are confined to the valley on the top of the mountain. Noise measurements were undertaken and light vehicles were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact can be reversed As soon as the noise generating activities cease the noise impact on the surrounding population and environment will have improved and the impacts would be easily reversible.  Proposed mitigation:  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and the representative of the representative of the valley on the top of the mountain.  Peace to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Please of the absence of residence close to the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and environment will have improved and the impact on the surrounding population and											
ACTIVITY: Establishment/extension/maintenance of gravel roads. Travelling on roads (primarily light vehicles travelling up and down the mountain.  PROJECT PHASE APPLICABILITY: Construction; Operation; Closure  Impact description: As per the noise specialist report, the impact of these activities are not ginglificant because of the absence of residence close to the activities, and based on the fact that the activities are confined to the valley on the top of the mountain. Noise measurements were undertaken and light vehicles were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Extent of impact: During construction, operation period and closure.  Duration of impact: During construction, operation period and closure.  Degree to which impact can be reversed As soon as the noise generating activities cease the noise impact on the surrounding population and environment will have improved and the impacts would be easily reversible.  Proposed mitigation:  Entent of impact: During construction, operation period and closure.  Duration of impact: During construction, operation period and closure.  Degree to which impact makes a per the noise impact on the surrounding population and environment will have improved and the impacts would be easily reversible.  Proposed mitigation:  Entent of impact: During construction, operation period and closure.  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on si		Probability	Magnitude	Severity					Probability	Magnitude	Severity
Impact description: As per the noise specialist report, the impact of these activities are not significant because of the absence of residence close to the activities, and based on the fact that the activities are confined to the valley on the top of the mountain. Noise measurements were undertaken during times when drilling operations were undertaken and light vehicles were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Extent of impact: Confined to the valley on the top of the mountain.  Extent of impact: During construction, operation period and closure.  Duration of impact: During construction, operation period and closure.  Degree to which impact and be reversed As soon as the noise generating activities cease the noise impact on the surrounding population and environment will have improved and the impacts would be easily reversible.  Proposed mitigation:  Environmental mitigation:  Environmental mitigation:  Environmental mitigation:  Effective maintenance of vehicle engines and exhaust systems  Maintenance of drilling machines and the use of attenuation devices  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  A 1 1 L  To prevent noise nuisance of twich impact to the valley on the surrounding population and environment will have improved and the impacts would be easily reversible.  Operational Phase  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation:  Zoning of high noise areas	ACTIVITY: Establishment/extension/maintenance of gravel roads. Travelling on roads (prima	arily lig	ght vel	nicles	travelling up and down the m	ountain.					
is significant because of the absence of residence close to the activities, and based on the fact that the activities are confined to the valley on the top of the mountain. Noise measurements were undertaken aud light vehicles were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Extent of impact: Confined to the valley on the top of the mountain.  Extent of impact: Confined to the valley on the top of the mountain.  Extent of impact: During construction, operation period and closure.  Duration of impact: During construction, operation period and closure.  Health and safety mitigation as applicable to contractors and staff on site:  Hearing conservation programme as per the DMR guidelines on Noise Control  Exoning of high noise areas	PROJECT PHASE APPLICABILITY: Construction; Operation; Closure										
that the activities are confined to the valley on the top of the mountain. Noise measurements were undertaken during times when drilling operations were undertaken and light vehicles were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  environment  environment  environment will have improved and the impacts would be easily reversible.  Proposed mitigation: Environmental mitigation:  Environmental mitigation:  Environmental mitigation:  Environmental mitigation:  Environmental mitigation:  Environmental mitigation:  Environmental mitigation:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  From the construction of the mountain and the use of attenuation devices and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  From the construction of the mountain and the significant and the use of attenuation devices and staff on site:  From the construction of the mountain and the use of attenuation devices and staff on site:  From the construction of the mountain and the use of attenuation devices and staff on site:  From the construction of the mountain and the use of attenuation devices and staff on site:  From the construction of the mountai	Impact description: As per the noise specialist report, the impact of these activities are not	4	1	L	To prevent noise nuisance	Degree to which impact can be reversed As soon as the noise generating			4	1	L
were undertaken during times when drilling operations were undertaken and light vehicles were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  The impact will not be significant and the reference of high noise areas  The impact is period and closure.  The impact will not be significant and the use of high noise areas  The impact will not be significant and the use of high noise areas  The impact will not be significant and the use of high noise areas  The impact will not be significant and the use of high noise areas	significant because of the absence of residence close to the activities., and based on the fact				to surrounding	activities cease the noise impact on the surrounding population and					
were travelling up and down the mountain (Activities that can be viewed representative of the construction and road use)  Proposed mitigation: Environmental mitigation: Environmental mitigation:  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and the use of attenuation devices  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mi	that the activities are confined to the valley on the top of the mountain. Noise measurements				environment	environment will have improved and the impacts would be easily					
the construction and road use)  Proposed mitigation: Extent of impact: Confined to the valley on the top of the mountain.  Extent of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Proposed mitigation: Environmental mitigation:  • Effective maintenance of vehicle engines and exhaust systems • Maintenance of drilling machines and the use of attenuation devices  Health and safety mitigation as applicable to contractors and staff on site: • Hearing conservation programme as per the DMR guidelines on Noise Control • Zoning of high noise areas	were undertaken during times when drilling operations were undertaken and light vehicles					reversible.					
Extent of impact: Confined to the valley on the top of the mountain.  Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Environmental mitigation:  Management  Phase  Management  Health and safety mitigation as applicable to contractors and staff on site:  Hearing conservation programme as per the DMR guidelines on Noise Control  Zoning of high noise areas	were travelling up and down the mountain (Activities that can be viewed representative of										
Extent of impact: Confined to the valley on the top of the mountain.  Duration of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Phase  Management  Health and safety mitigation as applicable to contractors and staff on site:  Hearing conservation programme as per the DMR guidelines on Noise Control  Zoning of high noise areas	the construction and road use)					Proposed mitigation:					
• Maintenance of drilling machines and the use of attenuation devices  Duration of impact: During construction, operation period and closure.  Health and safety mitigation as applicable to contractors and staff on site:  Hearing conservation programme as per the DMR guidelines on Noise Control  Zoning of high noise areas						Environmental mitigation:	Operational	Aquila Steel			
Duration of impact: During construction, operation period and closure.  Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Health and safety mitigation as applicable to contractors and staff on site:  Hearing conservation programme as per the DMR guidelines on Noise Control  Zoning of high noise areas	Extent of impact: Confined to the valley on the top of the mountain.					Effective maintenance of vehicle engines and exhaust systems	Phase	Management			
Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Health and safety mitigation as applicable to contractors and staff on site:  Noise Control  Zoning of high noise areas						Maintenance of drilling machines and the use of attenuation devices					
Degree to which impact has caused irreplaceable loss: The impact will not be significant and therefore there should be no loss of resources.  • Hearing conservation programme as per the DMR guidelines on Noise Control • Zoning of high noise areas	<u>Duration of impact</u> : During construction, operation period and closure.										
therefore there should be no loss of resources.  Noise Control  Zoning of high noise areas						Health and safety mitigation as applicable to contractors and staff on site:					
Zoning of high noise areas	Degree to which impact has caused irreplaceable loss: The impact will not be significant and					Hearing conservation programme as per the DMR guidelines on					
	therefore there should be no loss of resources.					Noise Control					
						Zoning of high noise areas					

# 4.2.13 Permits/License triggered by unlawful road construction and associated activities

#### 4.2.13.1 Abstraction of groundwater

Authorisation requirements	Compliance	Environmental objective	Mitigatory action plan	Timeframe	Responsibility	Compliance
	Status (pre-					Status (post-
	mitigation)					mitigation)
ENVIRONMENTAL COMPONENT: Permits/Licenses						
ACTIVITY: Abstraction of water (Activity is not directly associated with road construction)						
PROJECT PHASE APPLICABILITY: Construction; Operation						
Water abstraction as undertaken relate to the prospecting activities, and not to road	Compliance	Ensure compliance with	Degree to which impact can be reversed: Not applicable			
construction, but is still included within this section. All water used for the prospecting		Chapter 4 of the NWA,				
activities, including domestic potable water, were obtained from a borehole located on site.		1998.	Proposed mitigation:		Aquila Steel	
The borehole is located at the foot of the mountain.			1. Further follow-up to the DWA on the status of the water use	Immediate	Management	
			registration.			



Authorisation requirements	Compliance	Environmental objective	Mitigatory action plan	Timeframe	Responsibility	Compliance
	Status (pre-					Status (post-
	mitigation)					mitigation)
The system is designed for 2 x RC rig and 1 x diamond rig, (Each using approximately 1000			2. Should any future abstraction be undertaken, volumes of abstraction	Operational	Aquila Steel	
I per day). Approximately 100% of water is utilised by employees as drinking water per day.			must be monitored (self-recording meter) and noted daily.	Phase	Management	
Based on 3000ℓ per day for drilling rigs and 100ℓ per day potable use, a total volume of 3.1						
m³/day The daily volume of water abstracted from boreholes was not monitored, and for						
purpose of this EIR, it is assumed that quantity of abstraction exceeds 10m³/day (to account						
for ineffective water use and other applications not mentioned). Further information on						
quantities of abstraction was obtained from the water use registration as compiled (13 May						
2011) and submitted to the DWA, indicate a total volume for abstraction of 6130 m³/year						
(maximum pumping hours of 56 per week). Assuming 8 hours per day, this equates to 15						
m³/day.						
Registration and licensing requirements						
1. Registration as per GN 399 of 26 March 2004:						
According to the GN 399 general authorisations, dated March 2004, in terms of Section 39						
of the NWA, 1998 (Act 36 of 1998), a person who takes more than 50 cubic meters of water						
from a surface water resource or 10 cubic meters of water from a groundwater resource on						
any given day must register the water use with the responsible authority. As more than 10						
m³ is assumed to be abstracted from the borehole per day, registration is required. Water						
use registration was compiled and submitted by Aquila Steel to the DWA in May 2011						
(although no records of submission available), and a follow-up and resubmission done on 31						
July 2012. As yet, no water use registration certificate has been received from the						
Department.						
2. Licensing as per GN 399 of March 2004:						
According to the GN 399 general authorisations, dated 26 March 2004, a person who owns						
or lawfully occupies property registered at the Deeds Office at the date of the notice may on						
that property or land take groundwater as set out in Table 1.2, outside the areas set out in						
paragraph 1.2.						
According to Table 1.2 of GN 399 general authorisations, dated 26 March 2004, 75 m <sup>3</sup> of						
water per hectare per year may be taken from quaternary catchment C23L. The property						
from which groundwater is abstracted (Portion 0 of the farm Randstephne 455 KQ) is 837ha						
in size. This means that under the general authorisations, 62 775m³ of groundwater may be						
abstracted on the property per annum. This equates to 174.38m³ of groundwater that may						
be abstracted per day. As only 3.1m³ was abstracted per day, a license in terms of Chapter						
4 of the National Water Act, 1998 (Act No. 36 of 1998) is therefore NOT required.						



## 4.2.13.2 Construction of roads through drainage lines

Authorisation requirements	Compliance	Environmental objective	Mitigatory action plan	Timeframe	Responsibility							
	Status											
ENVIRONMENTAL COMPONENT: Permits/Licenses												
ACTIVITY: Activities also interfered with non-perennial drainage lines, with road construction through a number of drainage lines.												
PROJECT PHASE APPLICABILITY: Construction; Operation												
Numerous drainage lines occur from the higher peaks in the north-eastern parts of the site	Non-	Ensure compliance with	Degree to which impact can be reversed: Impact can be reversed									
and flows down towards the Sand River south of the site The gravel roads crosses the natural	compliance	Chapter 4 of the NWA,	through water use license application and registration of water use.									
drainage lines, causing an impact on surface water quality and surface water flow patterns.		1998										
			Proposed mitigation:									
Registration and licensing requirements			Undertake water use license, 21(c) and 21(i).for those activities	November 2014	Aquila Steel							
The site is located in the A24H quaternary drainage region, a drainage region included in			constituting water use activity.	(submission)	Management							
Table 1 - Areas excluded from notice "GN 1199 general authorisations", dated December												
2009, in terms of Section 39 of the NWA, 1998 (Act 36 of 1998). The construction of the												
roads over the drainage lines therefore require a water use license and registration.												

#### 4.2.14 Social

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risk (befo		ting	Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	Risk (after mitig	r	
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Social										
ACTIVITY: Prospecting (33 km roads constructed, with approximately 33ha disturbance. Als	o 12 b	lasts	done	during the same period (2007	7 – 2013)					
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure										
Impact description:	5	5	Н	Social license to operate	Degree to which impact can be reversed: The impact on cultural heritage			5	4	Н
During the consultation process for the SIA the following information regarding these					associated with the Gatkop cave is at this stage reversible to an extent.					
activities emerged:					This impact can be reversed at a high cost with a lot of effort.					
The visual impacts were not mitigated sufficiently and it has changed the sense of place.										
• There was a breakdown in the trust relationship between the mine and the communities					The impact on social license to operate is reversible over time, but with					
due to the mine's behaviour during and after the event - the information provided to the					great effort.					
public was incongruent with the mine's activities.										
This event was the catalyst for the mine to lose its social license to operate.					Proposed mitigation:					
					1. The significance of the cultural heritage of the caves should be					
The social impacts associated with the event are intangible and laid the foundation for the					evaluated by a specialist and the mine should enter in discussions	Immediate	Aquila Steel			
future interaction between the mine and the affected communities. The Impacts associated					with the traditional healers on the way forward to determine whether		Management			



Environmental impact, extent, duration, significance and degree to which impact has	Risl	k ra	iting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ing
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	r	
	miti	gation	n)					mitig	gation	)
	>	Φ						>	Φ	
	bilit	itud	ity						itud	ity
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
with the activities that require a Section 24G approval are similar to the impacts associated		2	S		there is a mutually beneficial solution (Refer to Table 4.2.3.1,				2	S
with the project in its entirety. From a social perspective the activities that took place					mitigation measures by Anthropologist).					
intensified some of the social impacts, especially those related to the relationship between					2. Aquila Steel will need to make a concerted effort to gain social license					
Aquila Steel and the affected communities. From a social perspective the greatest risks are					to operate. It will not be easy for Aquila Steel to gain the trust of the		Aquila Steel			
the presence of the Gatkop cave in close proximity to the prospecting rights area that have					community based on their track record. Aquila Steel needs to be more	Immediate	Management			
high cultural significance for certain indigenous groups as well as the absence of social					transparent about their action and should make an effort to share		<u> </u>			
license to operate. Other impacts include the change in sense of place and the negative					requested information where possible. They should conduct					
effect that it can have on the tourism industry. As per comment from IAP (Meletse Game					themselves in a neighbourly way and demonstrate that they respect					
Reserve, located close to project site), regarding tourism within the area:					the other stakeholders in the area. This to include:					
Meletse Game Reserve is an 11,000 hectare private nature reserve, wholly owned by an					Aquila Steel should compile and implement a community relations					
overseas group, which purchased the property in 2011 with the distinct intention of					programme with the input of the community.					
developing world class wildlife based tourism facilities. The owners immediately recognised					This should include appointing a community liaison officer and					
the intrinsic aesthetic value of this pristine area within a short travelling distance of Gauteng					perhaps training for the staff members that have to deal with other					
Province and specifically OR Tambo International Airport. The reserve has two high-					people.					
specification luxury lodges of 30-beds each. To date the owners have invested significant										
sums of money in order to upgrade the lodge accommodation, road networks, perimeter										
fences, water reticulation network and the eradication of alien plant species and bush										
encroachment. The reserve was ecologically assessed by Dr Noel van Rooyen of the										
University of Pretoria Centre for Wildlife Management, drawing up a detailed ecological										
management plan that has been implemented by a full-time ecological unit on the reserve.										
A further significant investment has been made in wildlife acquisitions including rare and										
endangered species such as White rhinoceros. It is the intention of the owners that Meletse										
become a significant role player in high-end ecotourism and wildlife production, regional										
development, social and infrastructure development and local job creation.										
Extent of impact: Social Impacts are not sitespecific, but occur in areas around the site.										
Social Impacts also occur even if no physical activities have taken place.										
<u>Duration of impact</u> : Commencing during construction phase that could be beyond life of										
activity (or even after rehabilitation has been completed).										
Degree to which impact has caused irreplaceable loss: Aquila Steel would have perceived										
in a different manner if these activities did not take place.										
L	1			l .		l				



### 4.2.15 Soil

#### 4.2.15.1 Road construction leading to runoff from roads

Environmental impact, extent, duration, significance and degree to which impact has	Ris	k rati	ng	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rati	ng
caused irreplaceable loss	(be	fore			mitigatory action plan			(after		
	mit	igation)						mitig	ation)	
	>	Φ						<u> </u>	Φ	
	pillit	itud	<u> </u>					l billit	itud	it
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Soil		2	<u> </u>						2	S
ENVIRONMENTAL COMPONENT. 5011										
ACTIVITY: Road construction leading to runoff from roads										
PROJECT BUACE APPLICABILITY Constructions Or continue Classes										
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure										
Impact description: Soil Erosion as a result of run-off water from road.	2	2 1	_	To conserve topsoil and	Degree to which impact can be reversed: Reversible			2	2	
Most of the road up to the mountain top has been there for longer than five years. The amount				land capability						
of erosion that has occurred along it is therefore a good indicator of the risk of further erosion.					Proposed mitigation:	Operational	ECO			
The field assessment showed very little erosion damage along the road. Although water					Regular inspections to be undertaken and if signs of erosion are	Phase				
accumulates along certain steeper sections and runs down the road, damage to the road					identified, mechanical inputs will be required.					
itself is minimal and there is absolutely no gulley formation below the points where water is					2. If gully erosion starts at any of the water discharge points from the					
diverted from the road, even on steep slopes. At all of these points the indications are that					road then mechanical inputs will need to be made to stabilise the					
water is naturally dispersed and absorbed into the soil over a short distance without causing					soil and to distribute and break the flow of the water at that point.					
any erosion. This is likely due to the following factors:										
Low erodibility of the soils due to the stabilising effect of high iron oxide content,										
2. The high rockiness of the surface which protects it and facilitates water infiltration,										
3. The high surface cover of vegetation with an underlying grass component which has the										
same effect as point 2 above.										
Extent of impact: Site related – Extending only as far as the activity										
<u>Duration of impact</u> : Permanent										
Degree to which impact has caused irreplaceable loss: No										

## 4.2.15.2 Road construction leading to soil stripping

Environmental impact, extent, duration, significance and degree to which impact has	Risk	ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ratin
caused irreplaceable loss	(befo	ore			mitigatory action plan			(afte	r
	mitig	gatior	1)					mitig	ation)
		<u>e</u>						≥	<u>e</u>
	abili	nituc	rity					abilli	oituc 
	Probability	Magnitude	Severity					Probability	Magnitude
ENVIRONMENTAL COMPONENT: Soil			<u> </u>					, == ,	2   0
ACTIVITY: Road construction leading to soil stripping									
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure									
Impact description: Loss of original soil covering above road, which would be required if the	2	2	L	To conserve topsoil and	Degree to which impact can be reversed: Reversible			2	1
road is to be rehabilitated back to natural vegetation.				land capability					
The site of the road construction is on steep mountain land, with a land capability of class 8					Proposed mitigation:				
that cannot be used for agriculture. It therefore has no impact on agriculture in terms of a					The construction of the road would need to be reversed along its entire	Closure Phase	Aquila Steel		
loss of agricultural land. The only potential impacts are on soils along the road footprint.					length by using an excavator to return the soil material and rock that has		Management		
These impacts are erosion and loss of soil cover. Loss of soil only applies if the road footprint					been pushed down the slope below the road, back onto its surface. There				
is to be rehabilitated and re-vegetated. If the road is to remain a road then the loss of soil					would be a lack of topsoil due to it being buried underneath and mixed				
cover from it is irrelevant.					with the underlying rock. The returned material would need to be				
					stabilised to allow vegetation establishment on it.				
Extent of impact: Site related – Extending only as far as the activity									
<u>Duration of impact</u> : Permanent									
Degree to which impact has caused irreplaceable loss: No									
Sogres to William Impact has badosa irropiaesasio 1650. No									

#### 4.2.15.3 Storage/handling of fuels

Environmental impact, extent, duration, significance and degree to which impact has	Risk rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk rating
caused irreplaceable loss	(before		mitigatory action plan			(after
	mitigation)					mitigation)
	<u>₹</u> 9					it de
	Probability Magnitude Severity					Probability Magnitude Severity
	Prob Magr					Prob Mag Seve
ENVIRONMENTAL COMPONENT: Soil (but also potential impact to surface water and grounds)	ndwater)					
· · · · · · · · · · · · · · · · · · ·						
ACTIVITY: Refuelling of grading equipment						
PROJECT PHASE APPLICABILITY: Construction						



Environmental impact, extent, duration, significance and degree to which impact has	Risk	< ra	ating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra	ting
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	r	
	miti	gatio	n)					mitig	gation	1)
	ity	de						iŧ	de	
	Probability	nitu	erity					abil	nitu	erity
	Prok	Magnitude	Sev					Probability	Magnitude	Sev
Impact description: Spillages that may arise during fuel handling (loading and offloading)	3	2	M	To conserve soil and land	Degree to which impact can be reversed: Impact is reversible			1	1	L
activities are of small quantity (bulk storage of 1000 liters)				capability						
					Proposed mitigation:	Operational	Aquila Steel			
Extent of impact: Impact will be localised due to small quantities of spillage that may result.					1. No further road grading activities being undertaken and therefore	Phase	Management			
					source of contamination has been removed. However, should future					
<u>Duration of impact</u> : Extending beyond incident if no mitigation measures applied.					diesel handling activities be undertaken, the following must be					
					implemented:					
Degree to which impact has caused irreplaceable loss: None, due to small quantities of					Provide containment measures (e.g. drip trays) during refueling;					
spillage, and low frequency of such incidents.					Implement a spill management procedure, whereby all spillages					
					are immediately contained and the contaminated soil excavated					
					and treated as hazardous waste (off-site disposal)					
					2. Verify that the areas where fuel handling was done has been	Immediate	ECO			
					satisfactorily rehabilitated. If any contamination be identified, such					
					contaminated soil to be removed and disposed as hazardous waste					
					(e.g. Holfontein site)					

### 4.2.16 Traffic

Environmental impact, extent, duration, significance and degree to which impact has	Risk	ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	c ra	ting
caused irreplaceable loss	(befo	ore			mitigatory action plan			(afte	er	
	mitig	gation	n)					miti	gatior	1)
	iŧ	de						<u>F</u>	de	
	Probability	Magnitude	Severity					Probability	Initu	erity
	Prok	Мас	Sev					Prok	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Traffic										
ACTIVITY: The construction of 33km prospecting roads.										
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure										
PHOSEOT FINASE AFFEIGABLETT. Construction, Operation, Closure										
Impact description:	5	1	L	To prevent traffic impact	Degree to which impact can be reversed: Not applicable since trip			5	1	L
The roads on-site are not a trip generator, but the activity for which the roads were				due to vehicle movement	generation is not close to the threshold values.					
constructed can generate external trips. The external traffic impact occurs when plant is										
moved to and from the site, and to the daily staff trips during the time when prospecting					Proposed mitigation: The transportation engineer did not propose any					
takes place. From an external trip generation point of view, this trip generation would not					mitigation as activities had insignificant impacts.					
come close to the threshold values stated in the Manual for Traffic Impact Studies.										



Environmental impact, extent, duration, significance and degree to which impact has	Risk	ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ratin	g
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	r	
	mitio	gation	1)					mitig	gation)	
	Probability	Magnitude	rity					Probability	Magnitude	,
	Proba	Magr	Severity					Prob	Magnitud	,
The traffic impact during the prospecting phase was therefore limited to periods when										
prospecting activity took place, limited as it may have been. At times of no prospecting there										
was no impact on the external road network.										
Extent of impact: External road network.										
<u>Duration of impact</u> : During periods of road construction (2007 to 2013).										
Degree to which impact has caused irreplaceable loss: None due to low significance of impact.										

## 4.2.17 Vibration

Environmental impact, extent, duration, significance and degree to which impact has	Risk	ra	ting	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	c ra	ting
caused irreplaceable loss	(bef	ore			mitigatory action plan			(afte	er	
	mitig	gatior	า)					miti	gatior	n)
	>	(I)		-				>	(I)	
	billit	tude	ity					billit	tude	<u> </u>
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
	P	Ž	Š					P	Ž	S
ENVIRONMENTAL COMPONENT: Vibration										
ACTIVITY: Civil blasting for establishment of the road (12 blasts). The blasting is small diam	eter, s	hort b	last h	noles civil type blasting operat	ions					
DDO IEOT BUACE ADDI IOADU ITV. Ocastostica										
PROJECT PHASE APPLICABILITY: Construction										
Impact description: The effects expected would have been ground vibration. Ground	4	1	L	Prevent disturbance	Degree to which impact can be reversed Blasting was done for road			4	1	L
vibration is expected to have been insignificant.				caused by vibration that	development. The only possible reversal of impact is on the road					
				may result in nuisance or	constructed itself. The road can be closed and rehabilitated (but no					
Extent of impact: It is expected that the civil blasting works would have yielded no significant				impact on ecology	reversal of impact on vibration possible)					
levels of ground vibration further than 100m from a blast. No ground vibration would have										
been observed at any of the installations or houses around the project area. If 5kg charge					Proposed mitigation: No mitigation proposed due to the low impact and					
was initiated per delay then 2.16 mm/s vibration is expected at 100m. Not taking topography					the fact that no further blasting will be undertaken.					
into account, which will have a more reducing effect. 5kg is a very worst case scenario. A										
1m civil blast hole could possibly be loaded with 0.240kg explosives. This means that 20										
Thi civil blast hole could possibly be loaded with 0.240kg explosives. This filed is that 20										



Environmental impact, extent, duration, significance and degree to which impact has	Ris	k r	ating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(bet	fore			mitigatory action plan			(after	
	miti	igatio	n)					mitiga	ation)
	Ξ£	de						lity	e C
	bability	Magnitude	erity					Probability	Magnitude Severity
	Prob	Mag	Sevel					Pro	Mag Sev
blast holes must be initiated together to obtain 5kg which is unlikely. Thus vibration would									
have been very low. This can be confirmed from blast reports if available.									
<u>Duration of impact</u> : During construction period (When blasting was undertaken)									
Degree to which impact has caused irreplaceable loss: The impact will not be significant and									
therefore there should be no loss of resources.									

#### 4.2.18 Visual

#### 4.2.18.1 Sensitive receptors in the Foreground and Middle Ground

Environmental impact, extent, duration, significance and degree to which impact has	Risk	rating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	ra ra	ating
caused irreplaceable loss	(befor	е		mitigatory action plan			(afte	r	
	mitiga	ition)					mitig	gatio	n)
	Probability	Magnitude					Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Visual on sensitive receptors in the foreground and midd	lle grou	nd							
ACTIVITY: Construction of 32.89km prospecting roads resulting in a surface disturbance of 3	33ha. T	his furtl	ner included activities of land cl	earing, topsoil removal, material loading and hauling, topsoil removal, stock	oiling, road grading	g, compaction, etc.			
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure									
Impact description: Several receptors are located in the foreground and middle ground of the	5 4	1 H	To preserve the sense of	Degree to which impact can be reversed: Recoverable - It is foreseen			5	4	Н
project site. The sensitive receptors in the foreground and middle ground of the generated			place of the area	that the original landscape form could be regained if the prospecting					32
viewshed represent mostly users of the road networks and several tourist facilities such as				roads are rehabilitated.					
game farms and lodges. Due to the height of the project site, most of the receptors will have									
a clear line of sight of the prospecting roads.				Proposed mitigation: The following mitigation measures are aimed at	Operational	Aquila Steel			
				mitigating the visual impact if the prospecting roads will remain.	Phase	Management			
Extent of impact: Regional				1. Cease the establishment of any new roads and rehabilitate the					
				redundant roads.					
<u>Duration of impact</u> : Lifespan of the project				2. Ensure that a permanent vegetated buffer of at least 100m is maintained along the southern boundary of the project site – north of					
Degree to which impact has caused irreplaceable loss: No				the P240 – to limit direct views onto the project site.					

<sup>32</sup> The signficance rating reflects if rehabilitation of the prospecting roads are not underateken. It is foreseen that the original landscape form could be regained if the prospecting roads are rehabilitated. The visual impact will therefore be improved from a negative to a positive impact.



Environmental impact, extent, duration, significance and degree to which impact has	Risk	rat	ing	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rat	ing
caused irreplaceable loss	(befo	re			mitigatory action plan			(after	r	
	mitig	ation	)					mitig	ation	)
	>	Ф						<u> </u>	Φ	
	bilit	itud	rity						itud	ity
	robability	Magnitude	Sever					Probability	Magnitude	ever
	<u> </u>	Σ	رن ن		3. Establish agreements with property owners neighbouring the P240 to			<u> </u>	Σ	<u> </u>
					maintain similar buffers to act as dust filters and reduce road noise					
					levels.					
					4. Only indigenous plant species to be introduced and planted.					
					5. Spoil areas below the road surface must be vegetated with a suitable					
					ground cover to prevent erosion and mud slides.					

#### 4.2.18.2 Erosion and landscape scarring

Environmental impact, extent, duration, significance and degree to which impact has	Risl	k ra	ating	Environmental objective	Degree to which impact can be reversed and the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(bet	fore			mitigatory action plan			(after	r
	miti	igatio	n)					mitig	ation)
	ity	ge						ity	Ф
	abil	nitu	erity					abil	nitu
	Probability	Magnitude	Severity					Probability	Magnitude Severity
ENVIRONMENTAL COMPONENT: Visual due to erosion and landscape scarring									
<b>ACTIVITY:</b> Construction of 32.89km prospecting roads resulting in a surface disturbance of 3	33ha.	This	turthe	r included activities of land cle	earing, topsoil removal, material loading and hauling, topsoil removal, stock	piling, road grading	g, compaction, etc.		
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure									
Impact description: The specific soil type is not particularly prone to wind and water erosion,	5	4	Н	To preserve the sense of	Degree to which impact can be reversed: Recoverable - It is foreseen			3	3 M
however, given the extreme slope of the site and the lack of compacted spoil areas resulted				place of the area	that the original landscape form could be regained if the prospecting				
from the roads construction, several areas along the prospecting roads have already started					roads are rehabilitated.				
to erode. In addition to the above, the prospecting roads have been cut into the mountainside									
to provide, in particular, sufficient passing facilities. This has created large sections of									
unsightly exposed rock faces.					Proposed mitigation: The following mitigation measures are aimed at	Operational	Aquila Steel		
					mitigating the visual impact if the prospecting roads will remain.	Phase	Management		
Extent of impact: Local – Limited to the immediate surroundings					1. Cease the establishment of any new roads and rehabilitate the				
					redundant roads.				
<u>Duration of impact</u> : Lifespan of the project					2. Ensure that a permanent vegetated buffer of at least 100m is				
					maintained along the southern boundary of the project site – north of				
Degree to which impact has caused irreplaceable loss: No					the P240 – to limit direct views onto the project site.				
					3. Establish agreements with property owners neighbouring the P240 to maintain similar buffers to act as dust filters and reduce road noise				
					levels.				
					4. Only indigenous plant species to be introduced and planted.				
					J J J J J. L.				



Environmental impact, extent, duration, significance and degree to which impact has	Risk	c ra	ting	Environmental objective	Degree to which in	mpact can	be reversed	and t	the supporting	Timeframe	Responsibility	Risk	rating
caused irreplaceable loss	(bef	ore			mitigatory action pla	ın						(after	
	miti	gatior	1)									mitiga	tion)
	>-	Φ										> (	σ
	ability	itude	rity									robability	rity
	robá	<b>l</b> agnitu	eve									robia   1	Magr
		2	S		5. Spoil areas below	the road sur	face must be v	enetate	d with a suitable				≥   ഗ
									a with a suitable				
					ground cover to pro	event erosio	n and mud slid	ies.					

#### 4.2.18.3 Vehicular movement

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risk rating (before mitigation)			Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	(afte	rating r pation)
	Probability	Magnitude	Severity					Probability	Magnitude Severity
ENVIRONMENTAL COMPONENT: Visual impact due to vehicular movement									
ACTIVITY: Construction of 32.89km prospecting roads resulting in a surface disturbance of 3	33ha.	This	furthe	r included activities of land cle	earing, topsoil removal, material loading and hauling, topsoil removal, stock	piling, road grading	g, compaction, etc.		
PROJECT PHASE APPLICABILITY: Construction; Operation; Closure									
Impact description: Dust caused by vehicles making use of the prospecting roads is expected	5	2	М	To preserve the sense of	Degree to which impact can be reversed: Recoverable			5	1 L
to have a visual impact, especially where dust clouds extend above tree canopies and				place of the area					
landscaping features. The causes of such dust plumes are commonly associated with trucks					Proposed mitigation:	Operational	Aquila Steel		
being driven on unsealed roads, rock crushing operations, drilling operations and wind					1. Cease the establishment of any new roads and rehabilitate the	Phase	Management		
blowing over areas disturbed by mining. Low frequency of light utility vehicle movement					redundant roads.				
during daytime hours is applicable to the operation. (No crushing of rock or hauling by trucks					2. Should the proposed activity proceed, no clearing of land may take				
applicable)					place outside the demarcated footprints.				
Extent of impact: Local					3. Vegetation along farm/lower-lying prospecting roads must not be disturbed and be allowed to act as bio-filters. This also applies for the vegetated buffer, of at least 100m, that must be maintained along the road boundary.				
<u>Duration of impact</u> : Lifespan of the project					4. Such a bio-filter must be maintained along the entire length of the				
Degree to which impact has caused irreplaceable loss: No					gravel road en route to Thabazimbi to prevent dust plumes spreading onto farming activities neighbouring the road.  5. Reduce and control dust through the use of approved dust suspension techniques as and when required.				



# 4.3 Cumulative Impacts

Cumulative impacts refer to the situation where an activity may in itself not have a significant impact, but may become significant when added to the existing and potential impacts from similar or different activities in the area.

The following potential cumulative impacts have been identified:

Table 43: Cumulative impacts

Environmental component	Impact Description
Air quality	According to atmospheric deposition monitoring conducted as part of prospecting
	and the EIA phase, deposition values continue to be well within proposed residential
	limits. There seems to be no significant impact from traffic on the provincial road,
	which would cause an impact on air quality.
Aquatic and surface water	The gravel road system and other related activities may result in an increase in
	erosion and run-off of water into the non-perennial drainage lines. This may result in
	an increase in sedimentation in the perennial streams into which they drain
	(Zandspruit & Sondagsrivier). The increase in sediment could be detrimental to the
	aquatic ecosystem because the water becomes silted making it difficult for fish and
	aquatic macro-invertebrates to breathe and feed amongst other ecological
	processes. The increased sedimentation and thus embeddedness of cobble and
	gravel substrate will negatively compromise the spawning beds of fish and therefore
	reduce the breeding success. It will also silt up the nursery areas and lessen the
	feeding ability of fish fry because of the loss of macro-invertebrate habitat. The riffles
	and rapids are important for recharging the oxygen content of the water which is
	critical to the river system as a whole and in particular flow dependent species; this
	function will be lost or reduced significantly with the increase of sediment loads in a
	river. There will also be an impact to irrigation operations and could also have
	varying degrees of impacts on the livestock and other animals drinking this water
Cultural heritage	Anthropology: The activities will have a cumulative impact in the sense that relations
	with the neighbouring community were put at risk and continue to do so in the future.
	Archaeology: All "site 4" sites are individually of low significance, but are
	cumulatively of value to capture LIA information.
	Labourers and Gatkop Cave: Community resistance may be created.
	Palaeontology: Cumulative impacts are low, given the small scale of the
	developments with regard to the total outcrop area of the fossiliferous rock units
	concerned.
Economic	The cumulative impact would in fact be the creation of the mine. If the mine does
	not continue, the roads could be used for eco-agriculture activities.



Environmental component	Impact Description
Fauna and Flora	The main impact is relative to ongoing fragmentation (the roads acts as a barrier),
	especially concerning sessile and substrate-restricted species which will find it
	difficult to exchange genes with similar populations elsewhere. This will include the
	loss or reduced ecosystem services provided by important functional groups such as
	insect pollinators (not able to cross the road) or invertebrate predators and
	herbivores which will not be able to control or maintain certain prey/plant populations
	on other parts of the system.
	Any arrestment of important functional or ecosystem service will result in a knock-
	down effect on the recruitment potential restoration ability of the system at hand.
	The construction of gravel roads have resulted in the large-scale loss of primary
	vegetation units and important faunal habitat types. Consequently, the loss of habitat
	has led to the displacement of fauna, the partial loss of certain threatened species and increased fragmentation of key functional habitat types that are already under
	pressure from developments in other parts of the country (e.g. loss of Highveld
	grasslands due to mining and cultivation).
Visual	The cumulative impact of the prospecting roads is both direct (loss of views onto a
Visual	pristine mountainside) and indirect (possible loss in property values as a result of
	the prospecting activities). The cumulative effect is also time crowding (e.g. the
	constant movement of heavy vehicles through the area) and space crowding (e.g.
	the rapid introduction of large-scale infrastructure in a rural landscape).



# 5. APPLICABLE LEGISLATION AND GUIDELINES

The table below provides an indication of the main legislation, policies and / or guidelines applicable to the rectification application project.

Table 44: Applicable legislation, policies and / or guidelines

Title of Legislation, Policy or	Administering Authority	Aim of Legislation, Policy or
Guideline		Guideline
	Laws of General Application	
The Constitution of the Republic of		To establish a Constitution with a Bill of
South Africa, 1996 (Act 108 of 1996)		Rights for the RSA.
Environment Conservation Act, 1989	Limpopo Department of	To control environmental conservation.
(Act 73 of 1989 as amended)	Economic Development,	
	Environment and Tourism	
National Environmental Management	Department of Economic	To provide for the integrated
Act, 1998 (Act 107 of 1998)	Development, Environment and	management of the environment, and
	Tourism	to regulate the 'Duty of Care' Principle.
Promotion of Access to Information	Department of Economic	To give effect to the constitutional right
Act, 2000 (Act 2 of 2000 as amended)	Development, Environment and	of access to any information held by the
	Tourism	State and any information that is held
		by another person and that is required
		for the exercise or protection of any
		rights.
	Air Quality and Noise	
National Environmental Management:	Department of Economic	To reform the law regulating air quality
Air Quality Act (Act No 39 of 2004)	Development, Environment and	to protect the environment by providing
	Tourism	reasonable measures for the prevention
		of pollution. To provide for national
		norms and standards regulating air
		quality monitoring, management and
		control.
Environmental Impact Assessment	Department of Economic	Regulations pertaining to environmental
Regulations, 2010 (Government	Development, Environment and	impact assessments.
Gazette No. 33306 of 18 June 2010)	Tourism	
	Water Management	
National Water Act (NWA), 1998 (Act	Department of Water Affairs	To provide for fundamental reform of
No 36 of 1998)	·	the law relating to water resources.
Government Notice (GN) 704, dated		To control water management aspects.
1999 under the NWA, 1998		
·	Biodiversity	
National Environmental Management:	Department of Economic	To provide for the management and
Biodiversity Act, 2004 (Act 10 of 2004)	Development, Environment and	conservation of South Africa's
11.1.1, 11.1., 11.1. (1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Tourism	biodiversity within the framework of the
		National Environmental Management
		Tradional Environmental Management



Title of Legislation, Policy or	Administering Authority	Aim of Legislation, Policy or
Guideline		Guideline
		Act, 1998; the protection of species and
		ecosystems that warrant national
		protection; the sustainable use of
		indigenous biological resources; the fair
		and equitable sharing of benefits arising
		from bio prospecting involving
		indigenous biological resources; the
		establishment and functions of a South
		African Biodiversity Institute; and for
		matters connected therewith.
Conservation of Agricultural	Department of Agriculture	To provide for control over the
Resources Act, 1983 (Act No 43 of		utilisation of the natural agricultural
1983)		resources of South Africa in order to
		promote the conservation of the soil,
		the water sources and the vegetation
		and the combating of weeds and
		invader plants.
National Veld and Forest Fire Act,	Department of Agriculture	To reform the law on veldt and forest
1998 (Act No 101 of 1998)		fires.
Agricultural Pest Act, 1983 (Act No 36	Department of Agriculture	To regulate plants, plant products and
of 1983 as amended) – GN R276 of 5		other regulated articles when imported
March 2004		into South Africa.
	Soil and Land Management	
National Environmental Management	Department of Economic	To provide for the integrated
Act, 1998 (Act 107 of 1998).	Development, Environment and	management of the environment and to
National Environmental Management	Tourism	regulate the 'Duty of Care' Principle.
Amendment Act, 2008 (Act 62 of		
2008).		
He	ritage and Archaeological Resou	irces
National Heritage Resources Act No	South African Heritage	To introduce an integrated and
25 of 1999 (Act No 25 of 1999 as	Resources Agency	interactive system for the management
amended)		of the national heritage resources; to
		promote good government at all levels,
		and
		empower civil society to nurture and
		conserve their heritage resources so
		that they may be bequeathed to future
		generations
	Protected Areas	
National Environmental Management:	Department of Economic	To provide for the protection and
Protected Areas Act, 2003 (Act No 57	Development, Environment and	conservation of ecologically viable
of 2003 as amended)	Tourism	areas representative of South Africa's
	I.	I .



Title of Legislation, Policy or	Administering Authority	Aim of Legislation, Policy or
Guideline		Guideline
		biological diversity and its natural
		landscapes.
Waterberg District Environmental	Waterberg District Municipality	To achieve a balance between the
Management Framework	Thabazimbi Local Municipality	pressures of tourism, the need to
		generate benefits to the local
		communities and the conservation of
		the natural environment
	Planning of New Activities	
National Environmental Management	Department of Economic	To provide for the integrated
Act, 1998 (Act 107 of 1998)	Development, Environment and	management of the environment and to
	Tourism	regulate the 'Duty of Care' Principle.
EIA Regulations R 543, R 544, R 545	Department of Economic	To regulate and control the
and R 546, dated June 2010) under	Development, Environment and	authorisation of certain listed activities.
the NEMA, 1998	Tourism	
Rectification of	commencement or continuation	of listed activities
Section 24g of the National	Department of Economic	To rectify unlawful commencement or
Environmental Management Act, 1998	Development, Environment and	continuation of listed activities.
( Act 107 of 1998)	Tourism	



# 6. PUBLIC PARTICIPATION PROCESS

## 6.1 Objectives of the Public Participation Process (PPP)

Section 24 of the Constitution of the Republic of South Africa of 1996 guarantees everyone the right to an environment that is not harmful to their health and well-being and to have the environment protected for the benefit of present and future generations. In order to give effect to this right, the National Environmental Management Amendment Act (NEMA), 2008 came into effect.

In terms of Section 24 (4) of the NEMA, 2008, procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must, *inter alia*, ensure, with respect to every application:

- Coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state.
- That the findings and recommendations flowing from an investigation, the general objective of integrated management laid down in NEMA, 2008 and the principles of environmental management set out in Section 2 of NEMA, 2008 are taken into account in any decision made by the organ state in relation to any proposed policy, programme, process, plan or projects, consequences or impacts.
- Public information and participation procedures which provide all integrated and affected parties, including all organs of state in all spheres of government that may have jurisdiction over any aspect of the activity, with a reasonable opportunity to participate in those information and participation procedures.

One of the general objectives of integrated environmental management laid down in Section 23(2) (d) of NEMA, 2008 is to: "ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment."

The National Environmental Management Principles as stipulated in NEMA, 2008 say;

- "Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
- The participation of all interested and affected parties in environmental governance must be promoted, and all people must have an opportunity to develop the understanding, skills and capacity necessary to achieve equitable and effective participation, and participation by vulnerable and disadvantage persons must be ensured".



## 6.2 Legislation and guidelines followed for the PPP

The public participation process for this Section 24G Rectification Application was conducted by Shangoni Management Services in terms of:

- The procedures and provisions in terms of the NEMA (as amended), 2008;
- Chapter 6 of the EIA Regulations of 2010;
- GN 807; Public Participation Guideline in the Environmental Impact Assessment Process, dated
   October 2012; and
- Other relevant legislation such as the Promotion of Access to Information Act (PAIA), 2000.

Refer to Appendix E1 for an extract regarding the required public participation process to be followed, taken from the relevant legislation and guidelines

## 6.3 Public Participation Process followed

### 6.3.1 Stakeholder Identification and Analysis

This section was obtained from the Social Impact Assessment (SIA) Report; compiled by Ptersa Environmental Management Consultants, dated March 2014. For comprehensive details on this report refer to Appendix F12.

#### 6.3.1.1 Approach

Stakeholder analysis in the context of SIA is the process of identifying and describing the individuals or groups that are likely to affect or be affected by the activity. These stakeholders are then sorted according to their impact on the activity and the impact the activity has or will have on them. This information is used to assess the social impacts on each stakeholder group.

A stakeholder is thus defined for this project as any person or organisation that can be positively or negatively impacted by, or cause an impact on the project. Types of stakeholders are:

- Primary stakeholders those ultimately affected, either positively or negatively by the project.
- Secondary stakeholders the 'intermediaries', that is, persons or organisations who are indirectly
  affected by the project.
- Key stakeholders (can also belong to the first two groups) those having significant influence
  upon or importance within the project.

(Adapted from WWF, 2005).

The goal of stakeholder analysis is to develop a strategic view of the human and institutional landscape, and of the relationships between the different stakeholders and the issues they care about most.

The stakeholder analysis will help the project identify:

- The interests of all stakeholders who may affect or be affected by the project;
- Potential conflicts or risks that could jeopardise the initiative;
- Opportunities and relationships that can be built on during implementation;



- Groups that should be encouraged to participate in different stages of the project;
- Appropriate strategies and approaches for stakeholder engagement; and
- Ways to reduce negative impacts on vulnerable and disadvantaged groups (WWF, 2005).

The full participation of stakeholders in both project design and implementation is a key to – but not a guarantee of – success. Stakeholder participation:

- Gives people some say over how the project may affect their lives;
- Is essential for sustainability;
- Generates a sense of ownership if initiated early in the development process;
- Provides opportunities for learning for both the project team and stakeholders themselves; and
- Builds capacity and enhances responsibility (WWF, 2005).

#### 6.3.1.2 Stakeholder groups

The figure below gives an overview of the key stakeholder groups for the project. Stakeholders have been grouped together for the purpose of the SIA. If a certain group has not been included in the stakeholder analysis, it does not mean that they are not stakeholders, just that they are not key stakeholders from a social perspective.

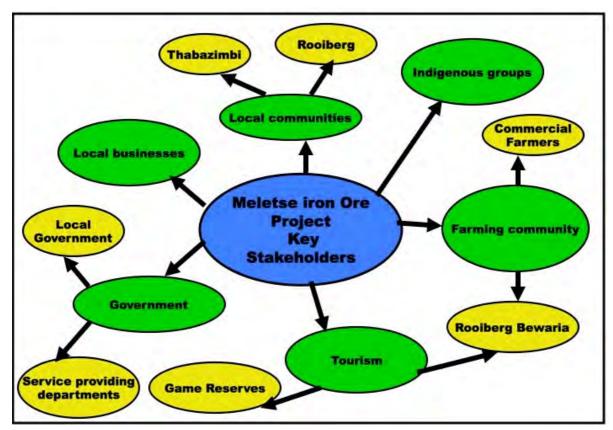


Figure 91: Stakeholder groups



The following stakeholder groups have been identified:

#### Local communities

The closest towns to the development are Thabazimbi and Rooiberg. The town of **Thabazimbi** is situated at the feet of the Ysterberg. Iscor started mining in the area in 1931 and the township of Thabazimbi was mainly established for the employees of Iscor (now Kumba Iron Ore). The town was proclaimed in 1953. Today mining accounts for about 80% of the GDP and 50% of formal employment in the local municipality. Agriculture provides about 19% of formal employment. The agricultural sector can be categorised as irrigation, dry land crop production and cattle and game farming. Kumba's Thabazimbi Iron Ore mine is approaching the end of its life with potential projects in the pipeline to extend the life of mine. The proposed Meletse Iron Ore project intends to house its employees in the town of Thabazimbi.

The little town of **Rooiberg** used to be the residence of the employees of the Rooiberg tin mine. When the mine was closed down in the 1990's, the town became deserted. The tin mine has not been rehabilitated. Today the town is a retirement and holiday village surrounded by game farms and lodges. The town has facilities such as a filling station, a shop or two, recreational facilities, daily clinic facilities and a police station. There is also a section in Rooiberg consisting of RDP houses where there is a high incidence of unemployed people.

Prehistoric mining of iron and tin took place in the Thabazimbi and Rooiberg areas.

#### Indigenous groups

There are caves in very close proximity to the proposed mining rights area that have great cultural significance for indigenous groups in the area. For these groups the caves, including the Meletse mountain (that forms part of the proposed site), is a sacred place where the traditional healers go to consult with the ancestors. The traditional healers go to the caves to pray, pay their respects to their ancestors and perform rituals. They go only about once or twice a year or whenever they need to go. A person can only go when his or her heart is free, not when they have problems. The traditional healers in the area believe that the ancestors would not allow anyone to mine at the project site. The ancestors also do not want noise there. It is important to note that it is not only the cave that is regarded as sacred, but the Meletse mountain as well. The cave is where they enter the mountain to consult with the ancestors. The bats in the cave as well as the brown hyenas form an important part of the system. As these mammals are nocturnal they have special significance to the traditional healers as a medium to the ancestors.

The traditional healers do not refer to the mountain as Meletse, but as Madimatle, the one with the cave. In the Tswana history and literature there are references to a big hole named Madimatle (http://en.wikipedia.org/wiki/Makapanstad; Pilane, G.E. 2002). It must be noted that these references are to the word 'Madimatle' and not to a specific location and should not be interpreted as referring



specifically to the Gatkop cave without further investigation. In the Tswana literature (Pilane, G.E., 2002) Madimatle is a hole where someone goes to speak with his ancestors and rituals are performed to please the ancestors. The rituals are meant to protect the people and to bring them rain. According to the literature Madimatle means 'beautiful blood', which can refer to the red colour associated with the presence of iron ore. The Batswana believe that their ancestors are found in holes, caves and mountains. That is why they respect places like these. The ancestors play a very important role in the Tswana culture and cultural identity.

#### Farming community

The area around the project site consists mainly of game farms that engage in a range of activities such as rare game breeding, eco-tourism and hunting. There are also cattle farms in the area. The rare game breeding includes animals such as white rhino, buffalo, roan, sable, black impala, lechwe, Livingstone eland and golden wildebeest. The community in the Rooiberg area has established the Rooiberg Bewaria (conservancy), a community organisation with the objective of conserving the biodiversity of the area and encouraging the co-operations of all the stakeholders to promote the conservation and sustainable utilisation of the area. They would like to see that future development in the area is sustainable and in accordance with environmental legislation.

#### **Tourism**

The Waterberg EMF Status Quo Report regards tourism as a potential growth area for the economy. Tourism in the area hinges on the natural and rural identity of the area. The Waterberg Biosphere Reserve, a declared UNESCO site, is an important eco-tourism attraction in the district with the Marakele National Park another important tourism feature in the area. The Marakele National Park is home to a breeding colony of Cape Vultures and rare indigenous species such as Yellowwood trees. There are also a large number of private game reserves in the area that offer various experiences such as game viewing, birding and hunting. For most tourism operators, the area is ideal as it is malaria free and only two to three hours' drive away from Gauteng. The area attracts both local and international tourists.

This also applies to the area around the project site. There are a number of lodges and private game reserves in the area, such as the upmarket Meletse Private Game Reserve. The lodges in the area have offerings for a range of tourists, luxury as well as very basic. The Meletse mountain is an icon in the area that has been compared with Table Mountain. Many establishments have incorporated the Meletse mountain in their names or logos, or offer a view of the Meletse mountain as a selling point. There are also a number of guesthouses and hotels in Thabazimbi, as well as in Rooiberg.

#### Local businesses

Thabazimbi has an active business chamber that represents approximately 141 businesses. Although mining is a priority for the town and many businesses owe their existence to mining or mining-related activities, their long-term strategy is focused on tourism and eco-tourism. Diversifying economic



activities are extremely important to the town given its high level of dependence on mining activities and that the Thabazimbi mine is approaching the end of its life, even if this can be postponed be a few years through additional mining activities. The businesses in town are very dependent on weekend traffic that passes through the town en route to a weekend destination.

#### Government

The project site falls within the boundaries of the Thabazimbi Local Municipality. The Waterberg District Municipality would be responsible for services that are not provided on a local level. The Verdrag Police training centre of the SAPS is a direct neighbour of the project site. Other government departments and parastatals that may be affected by the project include Eskom (electricity), Transnet (railway), Provincial Department of Education (schools), Provincial Department of Health and Social Development (healthcare), Provincial Department of Roads and Transport, Provincial Department of Cooperative Governance, Human Settlement and Traditional Affairs, Provincial Department of Public Works.

#### 6.3.2 Identification and registration of IAPs and key stakeholders

The table below lists the IAP's and landowners (also attached as Appendix E2) identified and notified (by means of e-mail, telephone, fax and/or post) of the activity. Copies of the notifications to the IAPs have been included in Appendix E3.

Table 45: List of IAPs identified and notified33

Name	Post/Email	Post/Email Sent
Rooiberg Bewaria (Chair person: E.B. Nieuwoudt)	info@rooibergbewaria.co.za	Е
Adam Barnard	john.barnard@soal.com	Е
Attie Jonker	attiej@lantic.net	Е
Charlotha E. Fransolet	P.O. Box 16812 Pretoria-North 0182	Р
Chris van Rooyen	PO Box 1960, Bedfordview, 2008	Р
Christopher York (Imberbe (Pty) Ltd)	yorksafaris@mweb.co.za	Е
Dr Adriaan Martin (Arries Family Trust)	Martin1@icon.co.za	Е
E.B. Nieuwoudt	ebn@mweb.co.za	Е
EJ Pelser	PO Box 541 Thabazimbi 0380 nypelser@gmail.com	Р

<sup>33</sup> All IAP's as reflected within table requested to be registered as IAP's



Name	Post/Email	Post/Email Sent
Frik Eloff	frikhunt@telkomsa.net	Е
Gerald Chapman	gdchapman@mweb.co.za	Е
Hilton Botha (SHIRLTON ESTATES cc	shirlton@thabanet.co.za	Е
J. L. Human	P.O. Box 244 Thabazimbi 0381	Р
J.H. Schutte	P.O. Box 822 Thabazimbi 0380 <a href="mailto:quatcpm@lantic.net">quatcpm@lantic.net</a>	Р
Gerard Boshoff	gjboshoff@mweb.co.za	E
J.M. Greyvenstein	info@weslite.co.za mailto:mike.greyvenstein@turboc.co.za	Е
Jacoba Johanna Aletta Maree	coba@mjn.co.za	Е
	jennifer@cavaleros.co.za	
Mr Cosmos Cavaleros / Jennifer Gehm	Werksman Attorneys is representing them. Send all correspondence to Justin Truter jtruter@werksman.com	E
Lyon's Lodge	lyonsafaris@mweb.co.za	E
Marakele National Park - Johan Taljaard	P.O. Box 800, Thabazimbi, 0380 Johan.Taljaard@sanparks.org	E
Mr Marius Schrenk - Familie Trust	Mariusschrenk@gmail.com	Е
Michael White (Bethel Farm CC)	mswhite@telkomsa.net	Е
MJ Raath (Rookpoort Beleggings Pty Ltd)	roadsurf@lantic.net	Е
Mr Barry Sigmund York Mr Derek Grant Preece	Mr Christopher York will communicate to them	
Mr Jan Coetzer	janc@ilc.co.za	Е
Mr LLS van der Watt	louis@atterbury.co.za / ferpa@mweb.co.za	Е
Mr. P.I. de Wet	P.O. Box 141 Thabazimbi, 0380	Р
MSA Erasmus	PO BOX 564 Thabazimbi, 0380	Р
Petrus Albertus van Niekerk	P.O Box 7244 Pretoria 0001	P



Name	Post/Email	Post/Email Sent
PH Reeders	P.O Box 88 Thabazimbi	Р
Pierre Mostert	pierrem@cpac.co.za	Е
Piet Steenkamp	P.O. Box 1630 Thabazimbi,0380	Р
Piet Venter	pietv@mics.co.za	Е
Tony Visser	tonyv@ilc.co.za	Е
John Trollope	john@tmsgroup.co.za	Е
Mr. Piet van Staden VAN STADEN (THABAZIMBI JAGPLAAS EDMS BKP -	Accgame@icon.co.za  Or  pietvs@telkomsa.net	Е
Mrs Claudia Coetzee	Claudia@ilaweb.co.za	Е
Mr Roelf Crouse	talitha@busicorfeeds.co.za crasueroelf@gmail.com	Е
Talitha Crause  Managing Director  Biominceur  Thabazimbi SA	talitha@biominceur.co.za	E
Mr Gerrit van der Berg	Gerrit van der Berg gerrit@atterbury.co.za	
Mr Fred Stow (General Manager - Meletse Game Reserve)	fred@meletsegamereserve.com	Е
Mr EN Sonnenbergs	cfrittelli@ens.co.za	E
Mr Cecil White	cecilwhite@telkomsa.net	Е
Mr Andrew Nicholson	andrew.umhlaba@telkomsa.net	Е
Mr Ampie Venter	ampie@thabanet.co.za	Е
Dr Wilhelm Schack	wilhelm@ekowild.co.za	Е
Dr Peter Oberem	Peter.oberem@afrivet.co.za And Pete.pam@iafrica.com	E
Dr Andre van Coller	Andrevancoller@yahoo.com	Е



Name	Post/Email	Post/Email Sent
Charles Cornal Jones	Charles@meletsegamereserve.com	Е
B.K. Makaepea (AISP)	Kgauza51@webmail.co.za	Е
M. Grobler ( Solu Gratia)	marulacamp@mweb.co.za	Е
J. Blaauw (Chairperson - Thabazimbi Business Chamber)	jnblaauw@telkomsa.net	Е
George Ferreira	palanca@vodamail.co.za	Е
Tokkie Swanepoel ( TBBV, Chamber, TVF)	tokkiesb@gmail.com	Е
S. McKernan ( Champion Wildlife)	thababbv@gmail.com champion.wildlife@gmail.com	Е
Mr. and Mrs. Wilkinson	P.O. Box 568 Thabazimbi 0380	Р
L. Erasmus (Manager – Leopard Cave)	iennifer@cavaleros.co.za  Werksman Attorneys is representing L Erasmus.  Send all correspondence to Justin Truter jtruter@werksman.com	E
F.J. Niemand (Manager – Meletse Game Breeders)	lvdw@atterbury.co.za piet.ferpa@gmail.com	E
C. Barkhuizen (Chamber of Commerce)	chrisbarkhuizen@sanlam4v.com	E
B.S. Swanepoel	ben@louwill.co.za	Е
P. Steenekamp	P.O. Box 1630 Thabazimbi 1380	Р
E. Fouche (Marekele Eco Estate)	eugene.fouche@angloamerican.com	Е
Darius (Reserve Manager - Meletse Game Reserve)	darius@meletsegamereserve.com	Е
Mike Gregvenstein	Mike.gregvenstein@gmail.com info@weslite.co.za	Е
E. Bisshoff	ebisshoff@yahoo.com	Е
Ampie Venter (JAU)	ampie@thabanet.co.za	Е



Name	Post/Email	Post/Email Sent
Harold Braack	harold.abrus@gmail.com	E
A.H. Combrink	P.O. Box 261 Thabazimbi 0380	Р
Patrick Benson (Wits)	pbenson.rsa@gmail.com	Е
Simon Gear (Birdlife)	advocancy@birdlife.org.za	E
Johan van Rooy	info@ecoza.net	E
Werksmans Attorneys Representing Mr Cosmos Cavaleros (Justin Truter & Christine Botha)	cbotha@werksmans.com itruter@werkmans.com	E
Chris Wagner (Waterberg Conservation Forum)	chriswagner@lantic.net	E
Verdragt Police Training Centre – Colonel Buks Kruger	014 721 0982 082 778 9188 KrugerB@saps.gov.za	Е
SANPARKS (Marakele) – Johan Taljaard	Johan.Taljaard@sanparks.org	E
Chris Barkhuizen	chrisbarkhuizen@sanlam4u.co.za	E
Solly Ranamane	sollyranamane@yahoo.com	Е
A.R. Ramogale	P.O. Box 2557 Thabazimbi 0380 adolf@gmail.com	E
L.P Nel	agtec@intekom.co.za	E
N. Mafafo	P.O. Box 1412, Thabazimbi, 0380 082 703 5923	Р
David Motlohloa	079 939 5025	Т
Rathogwe Colbert	076 073 4153	Т
Lhedzisani Pfarelo	076 716 4834	Т
Samuel Thebe	071 214 0443	Т



Name	Post/Email	Post/Email Sent
Simon Malane	071 987 1910	Т
Steven Mokoni	079 469 7222	Т
Taelo Samuel Tsebe	071 914 0443	Т
Lerato Conny Maname	073 503 5303	Т
Ananias Khonothi	073 307 8927	Т

All organs of state which may have jurisdiction in respect of the activity is considered to be registered interested and affected parties (IAPs). The following organs of state ( were notified of the activity:

Table 46) were notified of the activity:

Table 46: List of organs of state identified and notified

Department / Organ of State	Name
Thabazimbi LM	Councillor Patricia Moshito
Waterberg DM	Municipal Manager Mr. M.V. Letsoalo
Marakele NP	Conservation Manager Mphadeni Nthangeni Conservation Manager
DMR	Kolani T.C: (ASD) Mine Environmental Management
DWA	Mr. A. Matukane (Chief Director North West)
DVVA	Mr. R. Makahane
SAHRA	Mr Phillip Hine and Ms Collette Scheermeyer
DOA	Makananisi Funzani Mary
LEDET	Tinyiko Malungani
Department of Africulture	Ben Greeff
Thabazimbi LED	Molatlhegi Peter Motlhabane
Thabazimbi Env/Infra/Planning	Mr Piet Van Rensburg
Rooiberg Homeowners Ass.	Mr Philip Nel
Troolberg Fromeowners Ass.	Petrus Albertus van Niekerk
News Media	Elise Tempelhoff

Copies of the notifications to the organs of state have been included in Appendix E3, and examples are included in Figure 92 below.

The table below lists the traditional healers and Sangomas identified as IAP's during the process. These IAPs were contacted telephonically on the 23<sup>rd</sup> and 27<sup>th</sup> of May 2014. SMS's were also sent on the 27<sup>th</sup> of May 2014 at 12:01 containing an invitation to the Community Meetings at Regorogile and Rooiberg (held on the 12<sup>th</sup> of June 2014).



Table 47: Meletse Mountain Religious Interest

Name	Contact number	E-mail address	Postal address	Post / Telephone / E-mail / SMS (P/T/E/S)
Yvonne Kgothlong (Mmamatshego)		No email address	P.O. Box 763 Thabazimbi 0380	Р
Mmadikane	081 090 9472	No email address		T S
Khumalo	082 406 1140	khumalojb@icloud.com	P.O. Box 315 Bela Bela 0480	Е
Mmamataboge	079 608 7552	No email address		T S
Mogapelo	073 813 4395/ 076 902 2107	No email address		T S
Cristinah	073 089 1897	No email address		Т
Dudu	072 391 0681	No email address		T S
Ephenia	083 899 6321	No email address		T S
Johanah	084 694 6692/ 084 694 6692	No email address		Wrong number provided.
Nkomo	076 203 4697	No email address	PO Box 17 TBZ 0380	T S
Ntokie	073 198 5743	No email address		Wrong number provided.
Piet	073 341 5270	No email address		T S
Sara	072 779 6797	No email address		T S
Fransinah	083 394 4434	No email address	No postal address	S
Josinah	082 949 3354	No email address		Wrong number provided.

## 6.3.3 Methods of initial notification

#### 6.3.3.1 Advertisement(s)

The activity was advertised in a local newspaper Kwêvoel on the 22<sup>nd</sup> of November 2013. The Kwêvoel was found to be the most appropriate newspaper in terms of its accessibility to the IAPs. A copy of the advertisement and proof of the placement thereof is attached in Appendix E4. Refer also to Figure 93 below.



#### 6.3.3.2 Placement of site- and public notices

Notice was also given to Interested and Affected Parties (IAPs) by notice boards. Notice boards were placed at different, noticeable and conspicuous places on the 25th of November 2013 (refer to Figure 95 and Table 48) on 25th of November 2013. A copy of the site notice and photographs of the site notices are attached in Appendix E5.

#### 6.3.3.3 Notification letters

The Notification letters that provided background information pertaining to the unlawful activity were developed and sent out on the 22<sup>nd</sup> of November 2013, to all identified IAPs as well as to all organs of state that may have jurisdiction over any aspect of the unlawful activity.

Copies of the Notification letters and proof of distribution of the Notification letters to the adjacent landowners and organs of state are attached as Appendix E3 and Figure 92 and Figure 94.

### 6.3.3.4 Notification by phone

For IAPs identified for which no postal or email address is available (e.g. IAPs of religious interest), notification of upcoming public participation was done via phone and/or SMS.

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Figure 92: Example of notification letters sent to IAPs and Organs of State



Small (@ R800 stuk. Kortak (% Company) (and a more control as yellow (% Company) (and yellow) Friday 22 November 2013 Page 11 SKULD lose nagte Skakel ons vir 'n oplossing 073 578 8728 wat werk en word skuldvry Bargain Corner 0878020086 onder R20000 wees
Kontak

8845494277

ANTIEKHEDE: Antieke eischoutbuffet (met
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verskeie artiske silwervare. Antieke brosole, 2. waterverfskild
erye van Tafelberg
deur H Anderson
(1943), 2x olieverfskilderye deur Robert
Pölf (1942), Royal Albet teestelle, antieke
telefoon, antieke
felfefoon, antieke of gaan na 072 650 7143 Die smalls sluit DINSDAE 12:00 stiptelik bert teestelle, antieke telefoon, antieke telefoon, antieke filmkamera en antieke, handgemaakte Indiese tafelije Kortak

KRCHO Cartridge Kortak

KRCHO Cartridges Car **ALLIED COMPUTERS EN IKATISENG** SECURITY ALARMS hou op Vrydag 29 November 2013 vanaf 10:00 tot laat 'n spitbraai oorkant Markea Gebou, voor Standard Bank parkeer area. Kom geniet 'n stukkie vleis, pap en sous terwyl ons nuwe produkte ten toon stel. ABRAHAM en PIET is buile bekenne verwers, bouers, instandhoudingswerk en telei-werkers verwerbestuurs-ook swerbaddens bou en mit klip ook bou 6720164689 en telei-werkers en telei-werkers en telei-werkers en telei-werkers en telei-werkers verwerbestuurs-ook sensie. Suuderdom 25+, opledding word 25+, opledding word som telei-werkers en telei-werk Ikatiseng het promosies op alarms. Ons stel bekend die 'protector kit' vir slegs R4 000.00, installasie ingesluit. Kom kyk hoe ons stelsels werk om u huis of besigheid te beveilig met monitering, asook reaksie. Hiermee wil ons graag al ons kliënte bedank vir julle VOERTUIE

EK koop motors, bakkies en trokke vir
kontant.

Chabir

Ababir

Kontant.

Chabir

Kontant.

Chabir lojale ondersteuning. Kom geniet die dag saam met ons. 
 0721267886
 welkom

 URGENTLY
 wanted

 0739263337
 0782796746

 Best prices paid.
 CHIDO would like to work every day

 0832309221
 0849916365
 NOTICE OF APPLICATION FOR RECTIFICATION FOR AQUILA STEEL (S Africa) (PTY) LTD REF NO: 12/1 /9-6/S24G/15-W1 Unlawful commencement or continuation of activities identified in terms of the environmental impact assessment regulations in terms of section 24G, real with section 7 (Transitional provision) of the National Environmental Management American Act (Act No. 8 of 2004). 0832309221
TE koop, Voetsloots: 0849916365
12 Yarrasha DT 50cc 12 Jaar. Hy kan teel, Scorambler en f kulfan vonderhandelbaar vir onderhandelbaar vir oabel, Kontak: na enige werk om eike 021 9187975/ was 1985 1987975 1985 1987975 1985 1987975 1987 Notice is given, in terms of section 24(G) read together with sections 24(F) and 12(3) of the National Environmental Management Amendment Act (Act No 62 of 2008) and the Environment Conservation Act (Act No 73 of 1989) that the Limpopo Department of Economic Development, Environment and Tourism (LEDET) is considering: Granting Aquila Steel (5 Africa) (Pty) Ltd rectification in terms of Sections 24(G), 24(F) and 12(3) of the National Environmental Management Amendment Act (Act No. 62 of 2008); and Granting authorisation to Aquila Steel (5 Africa) (Pty) Ltd from complying with the Environmental Impact Assessment Regulations (Regulations R 1182 and R 1183, as amended yinkich have been promulgated in terms of the above Environment Conservation Act (Act 73 of 1989); in correspondence with Regulations R544 of the Environmental Management Amendment Act (Act No. 62 of 2008). 171 9187975/
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Listed Activity; The construction of a road, outside urban areas, (i) With a reserve wider than 135 meters or, Where no reserve exists where the road is wider than 8 meters, R 544, 18 June 2010 22 Project description: The widening and lengthening of existing roads where no reserve exits and R 544, 18 June 2010 is wider than 8 meters. Listed Activity; The widening of a road by more than 6 meters, or the lengthening of a road by K1500 o n.e.

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Queries regarding this matter must be referred to: Shangoni Management Services (Pty) Ltd: Contact Person: Mrs Khosi Mohtahlo Tet: (012) 807 7036, Cell: + (0)79 892 4930, Fax: (012) 807 1014 E-mail: <a href="https://doi.org/10.109/10.1097

Figure 93: Copy of newspaper advertisement (initial notification)



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Figure 94: Proof of registered letters sent to IAP's

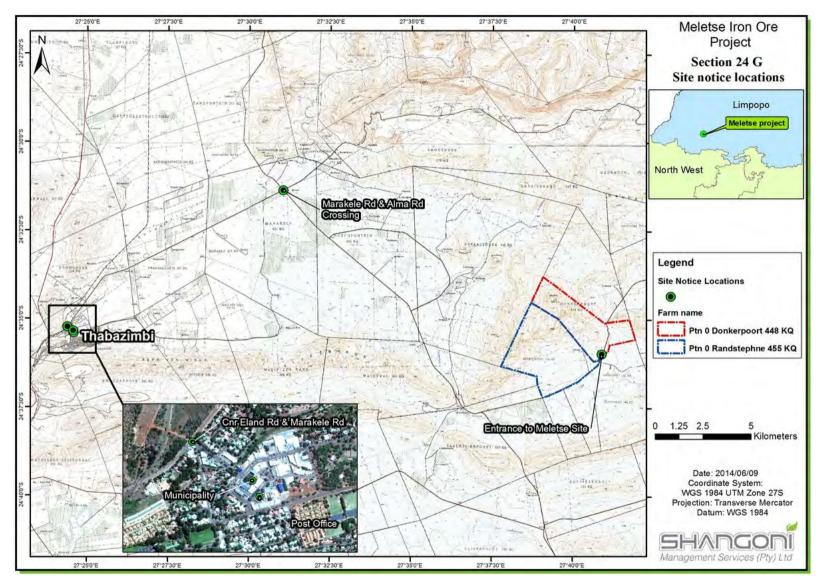


Figure 95: Locations of initial site notices



Table 48: Copy of initial notices placed on-site and in public places



Figure 96: Alma and Marakele road crossing



Figure 97: Junction Eland Str and Marakele Rd



Figure 98: Post office



Figure 99: Site entrance gate



Figure 100: Thabazimbi municipal office

#### 6.3.4 Public meeting(s)

#### **Public Meeting**

A public meeting was held on the 1<sup>st</sup> of February 2014. Notifications of this meeting were sent via email and telephonically. The minutes of the public meeting, a copy of the presentation and the attendance register are attached in Appendix E7.

#### Information Session

Due to a request received during the Public meeting of 01 February 2014, an additional Information Session was held on 31 May 2014.

The date for the Information Session was communicated to IAPs in advance as part of the monthly progress report that is sent to the IAP's in the first week of each month (refer to Appendix E8). Notifications were also sent via email. Refer to Appendix E6 for an example of notification (e-mail) sent to IAPs.

The Information Session allowed Interested and Affected Parties (IAP) the opportunity to personally raise questions to specialists regarding the results of completed specialist studies. Each specialist was available at a specific station where questions were raised. The IAP's were requested to address (in letter or e-mail format) any concerns arising from the mentioned session. No comments and concerns have yet been received subsequent to the Information Session date.

Specialists for the following studies attended the Information Session:

- Vulture Study,
- Storm water Plan,
- Traffic Impact Assessment,
- Visual Impact Assessment,
- Economical Study,
- Bat Forage Assessment,
- Social Impact Assessment,
- Blasting and Vibration Study,
- Air Quality Study,
- Herpetology Study,
- Heritage Impact Assessment,
- Soil- and Wetland Assessment,
- Noise Study, and
- Geohydrological Assessment.

A copy of the presentation and the attendance register for the Information Session are attached in Appendix E7.



#### **Community Meetings**

The following Community meetings were held on the 12th of June 2014:

- Regorogile Community Meeting, held at 15:00 at the Regorogile Community Hall; and
- Rooiberg Community Meeting, held at 18:00 at the Itireleng Secondary School.

The purpose of the above-mentioned community meetings was to present background information on the Meletse Iron Ore Project (including the Section 24G rectification application) to the community members and farm workers living and working on the farms in the surrounding area and to provide an opportunity for questions and comments.

Notifications for these meetings were sent via email, telephonically and using short message service (sms). Furthermore, an advertisement was placed in the local newspapers (Kwêvoel and Die Pos) in both English and Tswana, and site notices were placed at different, noticeable and conspicuous places on the 31st of May 2014. Refer to Appendix E4 and Figure 101 to Figure 108 below for a copy of the advertisements, as well as locations and photographs of site notices.

The minutes of the mentioned Community meetings, a copy of the presentation and the attendance register are attached in Appendix E7.



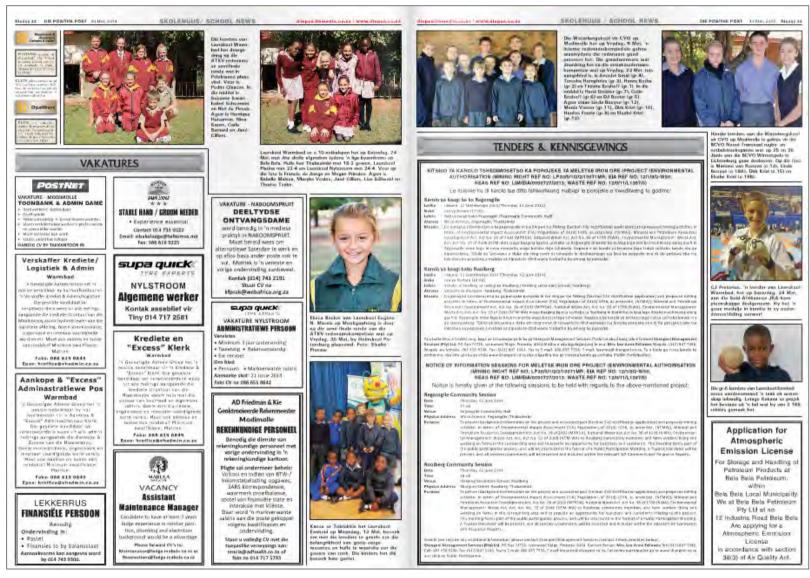


Figure 101: Copy of newspaper advertisement (Die Pos) (Community meetings)



Friday 30 May 2014

# Rustenburg man found hanged believed to be miner

The body of a man found hanging from a tree in North West is believed to be that of a mineworker, while miners on their way to work have been beaten.

A man found hanging from a tree on Tues-day in Broederstroom in North West's trou-bled platinum mining bet is believed to have been a mineworker, police said. Brigadier Thulani Ngubane said he was

found on the road between Hartbeespoort

Dam and Knugersdorp.
"The body of a man, alleged to be a mine-worker, was found hanging on the tree in Leaskbot, not far from Hartebeachook

Ngubane said the man was dressed in similar to those used by

A girl on her way to school saw the body and alerted her mother. A Volkswagen Golf ap-parently belonging to the deceased was tound on the readside it had crashed into a

"How the victim ended up being hanged in the tree is what police are invest registered inquest," Ngubane said.

In another case, two minoworkers were

In another case, two mineworners were beaten in Freedom Park near Rustenburg, on their way to work on Tusaday. "The Indident took piace near impalar's UG2 shaft early in the morning today (Tusaday)." One of the men apparently worked at an enginearing construction at Batoleng Rasimone Mine and the other at UG2 shaft at Impala, said Ngubana

victims sustained multiple stab wounds on the body and feet. No one has been arrested at this stage, as the police in-vastigation continues." implats confirmed one of the men worked at

Bathkeng, but denied the second one was

baseleng, but cannot the second one was in its amploy. The company said the men, aged 35 and 37, were assaulted and not statio ad. An assault docket was opened. Ngubane unged striking mineworkers to al-low those who were not on strike to avardase their constitutional rights without hindrance. or intimidation.

Oemands Members of the Association of Mineworkers and Construction Union (Amau) at Impais. Plathium, Lonnin, and Anglo American Plathium in the Rustenburg area in the North Wast downed tools on January 23 after dewast downad bots on January 23 after de-mands for an Immediate increase of R12 500, excluding allowances, for en-try-lavel mineworkers were not met. Amou has since agreed to staggered in-creases that would amount to R12 500 in

to 10% that they say would raise the overall minimum pay package to R12 500 a month

## Tekkie Tax dag vandag

THABAZIMBI - Die nasib nale Tekkie Tax dag is vandag, 30 Meil op hande.

dag in vendag, 30 Mei op hande. A ly daik nog rie jou takke veters, -hende of-plaikers gekoop het nie, kan julie genus na de SAVF-lanton toe gaan om dit daar to gen hoop, find en hulle in voornaad het/in Pantaan nommer 5. De Thabazimbi SAVF-Tak gaars ook to siene weer voor Thabazimbi Supengar. Gaan wys gerus jou ondersteuring daar:



lowances.
The strike has been marred by intimidation and violence that has led to the death of at Ramshod, who replaces Susan Shabangu

R19.8-billion in revenue Employaes have given up R6.8-billion in earnings, according to a website greated by the companies.

Talks brokered by a Labour Court judge continued at an undisclosed location in Johannesburg on Tuesday

rriorty
Meanwhile, newly appointed Minaral Resources Minister Ngoalio Ramathodi said
on Mendaty plans to make finding a solution
to the origining four-month platinum sector
strike one of his first priorities.

Mendato and Reconciliation.
In the interacts of all
Newly appointed Finance Minister Nhlanhia.

by July 2017. But their offer is inclusive of allowances. I miners to back me up to find a solution that iowances.

least five mineworkers.

The industrial action has cost companies resides, said Amou had every right to strike.

15 8 billion in several and a service of the ministry under which mining resides, said Amou had every right to strike. as the recognised union, and that negotia-tions would always respect that status. But he appealed to both sides to assist govern-

ment in bringing the longest running strile in the country's history to an end. Ramatihodi, a lawyer and brimer deputy minister of correctional services, begins his tenure with a difficult task.

on Monday plans to make finding a solution to the oripping bur-month platinum sector shike one of his first priorities.

Speaking after the averaging inceremony for ministers and deputies in Pritorias, Ramathodi said the shike was "hurting the country". "What is needed is to find out what the issues are that are holding back a resolution," he said. "I am asking business and the

Habitin-habiter, intended to end on Friday. The union approached the Labout Court to prevent the three companies from communi-cating with unionised staff about issues re-sisting to the strile. The judge recommended trying to first further negotiations between trying to that turner regionations between the two sides as they had last mid three weeks prior to the court appearance. The parties had still not reached an agree-ment by Friday, buttaks continued on Mon-day. Nane said he "was hoping that the matter

could be resolved in the Labour Court".

Marliana.
The shadow of Marliana looms heavily over the strike, smid concerns that it could de-scend into violance with the death of five mines killed sofar.
The lack of exports from this sector is al-

ready beginning to negatively impact the country's economy and investor confidence. ready beginning to negatively impact the ountry's economy and investor confidence, something Ramatihodi said he was well aware of. — Sapa, additional reporting by Chantelle Benjamin on 28 May 2014

KITSISO YA KAROLO TSHEDIMOSETSO KA POROJEKE YA MELETSE IRON ORE (PROJECT (ENVIRONMENTAL AUTHORISATION (MINING RIGHT REF NO: LP301911/2010071 MIL EIA REF NO: 1211/2024/50; NEAS REF NO: LIWELA/0101727/2013; WASTE REF NO: 129111(1)187/5)

se dito tehweriwang mabepi le porajoke e kwedilweng fa godino:

Karolo ya bagi bako Regorgile
Letha: Labore, 12 Seetaboaigo 2014 (Thursday, 12 June 2014).
Natic: Ura ya boraro (15 00)
Letiko: Haliya bagi bako Regorgile (Regorgile Community Hall).
Alcrese: Muse Avenus, Regorgile (Redorgile Community Hall).
Monato, Gon progreta takes Inspiratory.

Lefect Hallya basgi bako Regoragile (Regoragile Community Hall)
Alterase: Muse Avenue, Regoragile, Thabacimbi
Mosala: Go goragilas Ishedmasetas ka pa percieke leitse dingweitse filleng (Section 24G realification application) and proposed mining
activities intermed Environmental Impact Assistance (EA) Regulations of 2010; 1988, as amended, (MEMA). Mineral and Petribural
Resources (Development Act, Act No. 1612 2002 (URPOA), National Meter Act, Act No. 360 1998 (MWA), Empropriers
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Lefela: Sekalio sa Itireliang se selengika Raaiberg (Itireliang secondery School, Raaiberg)

Lefeld, Scholo cell frieng so calong to Readeng (Brateng (Brateng Schoot, Medicery).

Astrone: Seterals to Bluegum, Rootlery, Thaba zerbti.

Manata. Congregiat trhudimentals has ga porquish percycles to the tring we tas filling. (Section 24G nedification application) and proposed mining activities in terms of Environmental Impost Assessment EIA/ Regulations of 2010 1996, as amended. (NEMA).

Mineral and Paristourin Resources Devalopment Act. Act. No. 25 of 2002 (MPDDA), National Water Act, Act No. 36 of 1008 (MNA).

Environmental Management Wisslands, Act. Act. No. 50 of 2003 (MEMA) mago baseing legistal execution as Rootlerg to be first during legistal execution as Rootlerg to be first during legistal execution as Rootlerg to be first and along legistal execution as Rootlerg to the first and service as activated as activated

Fa o balla kitso e fetefeteoro, kopa de tatvaragenye le ba ga Shangori Monagement Servicas (Testa tae cika dirang jalo e fa faseliShangori Management Servicas (Phy) Ltd. PO Box 74725. Lymrenod Ridge, Pretoria, OO40,Motho o oka kgolagenyang ki anad Nrs. Lee-Anne Falcusas Mogala (Pt2) 9577035. Mogala wa larheka, 882,456,3208, Fast (012) 807 1014, Fast fa E-mail: 885,638.7958. E-mail: Reannegighengori od. sa. Fa o batti go tesepa kamio ka enthanata, cha dhri jalo ka ga stella www.Shangori.co.za saba o kgotha mo go tilayang kanologa sechaba (Publio Perrospation)

NOTICE OF INFORMATION SESSIONS FOR MELETSE IRON ORE PROJECT (ENVIRONMENTAL AUTHORISATION (MINING RIGHT REF NO: LPSDS/1/2/2/10471MR; EIA REF NO: 12/1/8/2-WSQ; NEAS REF NO: LIMIEIA/1/0/0/27/2013; WASTE REF NO 12/9/11/1.1387/5

tice is hereby given of the following sessions to be held with regards to the above-mentioned project.

# Regoragile Community Session Date: Thursday, 12 June 2014

Time: 15:00

Time: 15:00
Venue: Regeregile Community Hall
Physical Address: Muse Avenue: Regeregile: Thebazimbi
Purpose: To present beologicum information on the project and associated past (Section 24G rectification application) and
proposed mining activities informed of Environmental Project Assessment (EiA) Regulations of 2010; 1998, as amended,
(MEMA), Ministral and Pelmicium Resources Development Art. Act No. 26 of 2002 (MPROA), National Water Art. Act. No. 36 of
1998 (MWA), Environmental Management: Waste Act. Act. Act No. 59 of 2008 (MEMAW) to Rootinery community members and
form ventices fixing and working on forms in the summanding area and to provide an expensity for questions, and comments.
This meaning forms part of the public participation processe, and will be structured in the forms of a Public Participation Maconing.
A Tawara final-stor will be present, and all concerns/comments will be recorded and Included within the relevant IAP Comments. and Response Reports

Oate. Thorsday, 13 June 2014
Time: 18:00
Vanue: Ithrating Secondary School; Roeibarg
Dhysical Address: Bibegum Street, Roeibarg, Tresbazimni
Purpose. To precent background information on the project and associated post (Section 24G rectification application) and proposed mining activities in terms of Environmental Impact Associanced (EIA) Regulations of 2010) 1098, as amended, (NEMA). Mineral and Pebolosium Resociance Beautification, and 10,000 April 2000; (MERDA), National Water Adv. Act. No. 35 of 1988 (NWA). Environmental Management: Waste Act, Act, Act No. 59 of 2008 (NEM-WA) to Rootberg community members and term workers imig and working on farms in the currounding erect and to provide an appointuity for questions and comments redding to the project. This meeting forms part of the public participation provides at which the structured in the terms of a Public Parkapation Meeting. A Towaria translator will be present, and all concernationments will be recorded and included within the relevant MP-Commence and Response.

Comments and Response Reports Should you require any additional information, please context. Shangoni Management Services (context details provided below).
Shangoni Managemant Services (Phy) Ltd. PO 80x 74725, Lynnuscad Ridge, Prateria, 0040 Central: Paraori Mrs. Lea-Anne,
Fellower Tei. (012) 807 7038. Celt. 962 458 3275, Fax: (012) 807 1814. Fex to E-mail. 68 839 7956. E-mail.
leasane Schangenitzer, za, Forenline participation getowww.shang.on.loo.zaped tick on Public Participation.

Figure 102: Copy of newspaper advertisement (Kwêvoel) (Community meetings)



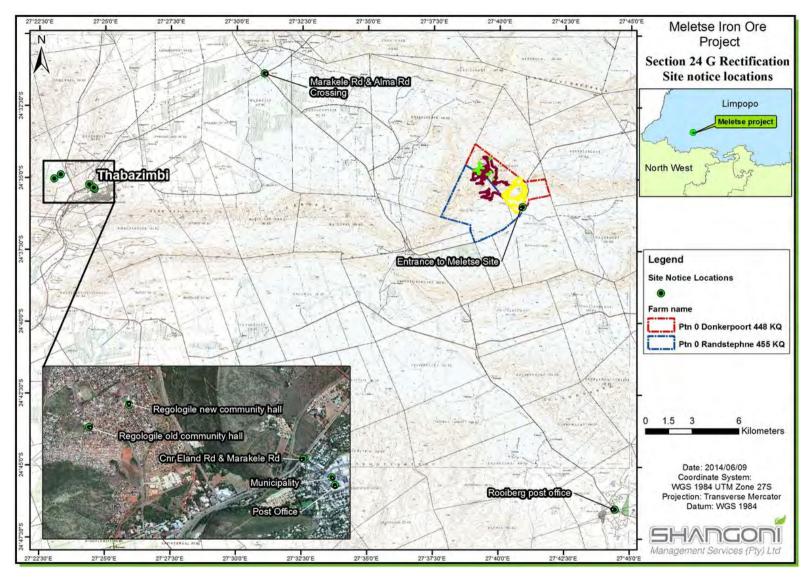


Figure 103: Map illustrating the site notice locations for the Rooiberg and Regorogile Community Meetings



Table 49: Copy of site notices placed for Rooiberg and Regorogile Community Meetings



Figure 104: Regorogile old community hall



Figure 105: Regorogile new community hall extension



Figure 106: Post office



Figure 107: Gate on-site



Figure 108: Marakele and Alma road crossing

#### 6.3.5 Additional consultation

An Anthropologist (Professor C.J. van Vuuren) was appointed to conduct an Anthropology study on the significance of the Madimatla Cave and the surrounding area. The approach followed in terms of consultation included a site visit on 29 March 2014 in the company of two African traditional healing practitioners. The traditional healing practitioners were represented by Mrs Mmamatshego Yvonne Tshwenye and her husband Mr Benjamin Kgotlang Tshwenye. A local resident Mr Mothloki. Mmamatshego and her husband whom have frequented the site since she became a traditional healer, were also consulted.

#### 6.3.6 Access and opportunity to comment on written submissions

#### First review period

A draft copy of this report was made available to the public for review for a period of fourteen (14) days, from 11 March 2014 to 24 March 2014, with a further extension provided to Werksmans Attorneys (until 11 April 2014), as they were not timeously notified of the first review period. A hard copy of the mentioned draft report was made available at the Thabazimbi Library for the IAPs to view and an electronic copy was placed on Shangoni Management Services' website (www.shangoni.co.za).

#### Second review period

After receiving comments and concerns from IAPs during the first review period (mentioned above), the draft Section 24G EIR was revised to address the concerns and comments raised. Subsequently, this Section 24G EIR (as submitted to LEDET) was made available to IAPs and organs of state for a second review period of 40 days. A hard copy of this Section 24G EIR was again made available at the Thabazimbi Library. An electronic copy of the report and its associated appendices, was also placed on the Shangoni Management Services' website (www.shangoni.co.za).

Registered IAPs were notified of the availability of the Section 24G EIR for public review. The IAPs were also informed to complete the register subsequent to reviewing thehard copy document.

### Third review period

After receiving comments and concerns from IAPs during the second period (mentioned above), the draft Section 24G EIR was revised to address the concerns and comments raised. Subsequently, this Final Section 24G EIR is made available to IAPs for a period of 30 days prior to submission to LEDET. A hard copy of this Section 24G EIR was again made available at the Thabazimbi Library. An electronic copy of the report and its associated appendices, was also placed on the Shangoni Management Services' website (www.shangoni.co.za).

Registered IAPs were notified of the availability of the Section 24G EIR for public review. The IAPs were also informed to complete the register subsequent to reviewing thehard copy document.



#### 6.3.7 Consultation with the relevant Authorities

#### 6.3.7.1 Application form in terms of the NEMA, 1998 and the EIA Regulations, dated 2010

The amended Section 24G rectification application form under NEMA, 1998 was submitted to LEDET on the 24<sup>th</sup> of January 2014. A letter of acknowledgement was issued by LEDET on 11 February 2014 (Appendix C2).

Another amendment was done to the Section 24G rectification application form (subsequent to a review of the listed activities undertaken and in consultation with LEDET). The latest amended application form was submitted to LEDET on 12 June 2014.

#### 6.3.7.2 Consultation with Authorities

A Public meeting was held on the 1<sup>st</sup> of February 2014 at the Kumba Cinema Hall in Thabazimbi. The relevant Authorities were invited to the mentioned meeting. The minutes of the meeting and attendance register are attached hereto as Appendix E7. Furthermore, a consultation session was held with LEDET on 23 May 2014, regarding the activities for inclusion into the S24G Rectification Application.

The following meetings were held with Authorities, during which the proposed Meletse Iron Ore Project, as well as the Section24G Rectification Application were discussed:

- An Authorities meeting with the Department of Water Affairs on 31 July 2014,
- An Authorities meeting with LEDET on 05 August 2014, and
- An Authorities meeting with DMR on 05 August 2014.

Furthermore, a site visit was held on 03 September 2014 for LEDET, with regards to the proposed Meletse Iron Ore Project, as well as the Section24G Rectification Application.

A site visit was also held with a representative from the Department of Agriculture on 21 October 2014.

### 6.3.8 Comments and responses

Issues, comments and questions received from the IAPs (via e-mail and letter) up to date are summarised in Table 50 below.



Table 50: IAP Comments and Responses Report

Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
25/11/2013 E-mail	Meletse Game Reserve	Fred Stow	If I understand the contents of the email and attachment correctly, your client has admittedly and illegally constructed roads beyond the authorised environmental limits as set out in their prospecting application. Is my understanding correct?  Meletse Game Reserve (SARPHC Properties Pty Ltd) feels strongly that in light of such a blatant transgression (as an experienced mining company, your client was surely aware of their authorised limitations and the required due process), and the resulting environmental damage, that your client rehabilitate the extra-limital damage to the site soonest.  Kindly provide me with your proposed rehabilitation plan at the earliest opportunity. It is deeply concerning that even as early as the prospecting phase, your client struggles to conform to the		Yes, Aquila Steel unlawfully constructed roads that are being applied for in terms of a Section 24G rectification application. A total constructed road length of 32.89 km is being applied for in this rectification process. This includes the existing farm roads that were widened and gravel roads that were constructed (in use and partially rehabilitated). The total area disturbance for the gravel road construction and areas cleared for prospecting equate to a surface area of 33 ha.  Mitigation measures and rehabilitation requirements are included as part of the risk assessment in Section 4.2 of
			authorised limitations. Is the Limpopo DMR aware of this transgression?		this Section 24G EIR, as well as the draft EMP (Appendix G).
27/12/2013 Letter	Potion 4 of the Farm Mc Kip Zyn Rand 438KQ	C.E Fransolet; Roelf Crause	<ol> <li>I refer to the registered letter, ref nr 12/1 /9-6/Section 24G/15-W1 sent by your offices.</li> <li>I am the registered owner of Potion 4 of the Farm Mc Kip Zyn Rand 438KQ, Thabazimbi District.</li> <li>I do not understand the content of this letter.</li> <li>I hereby request a representative from Aquila Steel to consult us in person concerning the content of this letter. Talitha Crause or Roelf Crause can be contacted and consulted concerning this issue.</li> <li>I am not in the position to comment or object in any way on this letter, before I was consulted by a representative of Aquila Steel.</li> </ol>	01/02/2014	Mr. Roelf Crause attended the Public Meeting held on 01 February 2014 (refer to the minutes of the meeting attached in Appendix E7), where consultation with IAP's were done and as attended by Aquila Steel representatives.
05/01/2014 Registration and Response form	Alma valley residents	Dr. Pamela Oberem	We are game and livestock farmers in the valley situated along the road from Alma Thabazimbi. Despite the attempts of Aquila Steel to downplay the impact of this intended mine, at the information day we learned that we will be drastically affected by these mining operations. We detail our concerns / objections below:  1) The nature of the area: The Meletse property is situated in the middle of an undeveloped, almost pristine wilderness. Most of the owners represented are livestock and crop farmers but some of us are game farmers who due to the unspoilt wilderness of the Alma Valley enhanced by the surrounding mountains have invested in building tourist camps for visitors. We have also invested time and money in various conservation projects. It is common knowledge that the proposed mine destroy this currently unspoilt environment.  2) Lack of consultation during the license application: it is our contention that only direct farmers were consulted in the initial process. The first that we, the Alma Valley residents became aware of this issue was when we saw the destruction on the Meletse Mountain and began to make enquiries from the previous owner.	05/01/2014 – Alma representative included in IAPs database	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Economic and tourism related impacts were assessed by a specialist. The resultant report is attached as Appendix F14. Impacts from the mentioned specialist report has also been incorporated in to the risk assessment in Section 4.2 of this Section 24G EIR.  The oversight of the Alma Valley residents is recognized, however the application was advertised in accordance with the NEMA regulations, which included site noitces, newspaper adverts. For further detail on the public participation process as followed refer to Section 6 of this S24EIR. The Alma Valley residents were included in the IAP database subsequent to receiving their letter. Notification of the availability of this Section 24G EIR will also be provided to the Alma Valley representatives. Please note that your concerns further appear to relate to the Meletse Iron Ore Project. The purpose of this Section 24G EIR is to describe and assess the impacts associated with the previously constructed road network (in support of a rectification application to LEDET). The impacts associated with the proposed activities will be included in the Scoping Report and EIR (application for environmental authorisation for proposed activities



05/01/2014 Registration and Response form	Alma valley residents	Dr. Pamela Oberem	3) Impact on the area: after attending the information meeting held by Aquila we have learnt that the impact will be as follows:	05/01/2014 – Alma representative included in IAPs database	The impacts as expressed in this correspondence are mainly related to the proposed Meletse Iron Ore Project.
1100001100 101111			Massive traffic flow along the Alma-Thabazimbi road; the road is gravel, carries farm traffic of farm animals, horse riders and escaped game animals. Heavy traffic on this road will cause noise pollution, dust pollution and a danger to farming activities.	o database	The purpose of this Section 24G EIR is to describe and assess the impacts associated with the previously constructed road network (in support of a rectification application to LEDET). The impacts associated with the
			Possible reactivation of the inactive railway: this railway was initially used for agricultural purposes. The reactivation of the railway through Alma for the transport of ore will cause severe impact on the rural nature of this area.		proposed activities (as referred to in the correspondence) will be included in the Scoping Report and EIR (application for environmental authorisation for proposed activities associated with the project).
			<ul> <li>Effects on the ground water: This area of the Waterberg has a large underground body of the purest water in the country. The high rainfall in the area and the run-off from the Waterberg Mountains will cause contamination of the ground water. This will severely impact on livestock farmers and ecosystems.</li> </ul>		The traffic, groundwater and visual-related impacts (associated with the previous construction of the prospecting roads) are discussed in Section 4.2 of this Section 24G EIR. Refer also to the Traffic Impact
			Destruction of the Meletse Mountain: the destruction of this mountain will completely deface the vista of the Alma valley in the west.		Assessment report, attached as Appendix F18.
			Lack of confidence in Aquila: during the prospecting period Aquila showed their contempt for environmental issues by making unauthorized roads on the Meletse Mountain and basically devastating the surroundings. They subsequently had to apologies and undertake to rehabilitate the mess (see attached photo- one of many in our possession). There also exists a photo on file of the Thabazimbi group showing Aquila staff in their branded overalls dumping refuse along the Thabazimbi road. When the staff became aware they were being photographed they made rude signs at photographers. Clearly this company has no respect for the environment and are therefore not welcome in our area.		The purpose of the Section 24G rectification application is to rectify the unlawful road construction and associated activities as undertaken by Aquila Steel. A timeline of the rectification process, including when the original application was submitted to the LEDET is provided within the Section 24G EIR.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
06/01/2014 Letter	Meletse Game Reserve	Fred Stow	The roads created by Aquila Steel to access drill sites have been the cause of much concern for Meletse Game Reserve. The proposed mining site is within 1,4km of Meletse Game Reserve and the illegal road network in clear view of the majority of the reserve. According to the original approved environmental management plan for the Aquila Steel prospecting activities, there would be between 1.6km to 3km of roads required to access 10 drill sites. There would also be no blasting activities required in order to create the required roads. In reality, and according to an environmental performance audit commissioned by Aquila Steel, over 30km of roads have been generated, using blasting activities, to access 200 drill sites.	25/03/2014	The activities triggered in terms of the EIA Regulations, 2010 and included in this Section 24G EIR, have been elaborated upon in terms of the surface area associated with the prospecting roads. The surface area reflected within the Section 24G EIR includes surface disturbance associated with both road construction as well as areas cleared for drilling of prospecting boreholes. Refer to Section 2 in this Section 24G EIR for a description of activities as undertaken  Geographic Information System (GIS) calculations were done and in total 32.89km of roads are present on-site (refer to Figure 7, Figure 8 and Figure 9). This includes 19.29km of constructed prospecting roads (in use); 1.95km of prospecting roads constructed (rehabilitated) and 11.65km of existing farm roads (widened). A total of 32.89km of roads form part of the Section 24G Rectification Application process, with a total surface disturbance of 33ha as cleared for the construction of roads and borehole sites.  Refer also to <i>Figure 2</i> of the Section 24G EIR titled: "Map illustrating the gravel roads on the contravened site.
			Meletse Game Reserve is an 11,000 hectare private nature reserve, wholly owned by an overseas group, which purchased the property in 2011 with the distinct intention of developing world class wildlife based tourism facilities. The owners immediately recognised the intrinsic aesthetic value of this pristine area within a short travelling distance of Gauteng Province and specifically OR Tambo International Airport. The reserve has two high-specification luxury lodges of 30-beds each. To date the owners have invested significant sums of money in order to upgrade the lodge accommodation, road networks, perimeter fences, water reticulation network and the eradication of alien plant species and bush encroachment. The reserve was ecologically assessed by Dr Noel van Rooyen of the University of Pretoria Centre for Wildlife Management, drawing up a detailed ecological management plan that has been implemented by a full-time ecological unit on the reserve. A further significant investment has been made in wildlife acquisitions including rare and endangered species such as White rhinoceros. It is the intention of the owners that Meletse become a significant role player in high-end ecotourism and wildlife production, regional development, social and infrastructure development and local job creation.  The main concerns revolve around the impacts associated with the excessive roads generated and the blasting activities used to create the roads, which have been raised to Aquila Steel and LEDET as early as 2010 and on an ongoing basis since then. LEDET officials undertook a site visit on 20 October 2011. To date no tangible rectification actions have occurred.		Your concerns are noted for inclusion into the Section 24G EIR.  Impacts associated with the clearing of an area for the construction of the roads and blasting activities are described in Section 4.2 of this Section 24G EIR. This Section 24G will be submitted to LEDET.

Note: For comments and concerns raised and responses thereto, as per discussions during the various meetings, refer to Appendix E7 for copies of the minutes of meetings.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response	
06/01/2014 Letter	Meletse Game Reserve	Fred Stow	It is Meletse Game Reserve's opinion that this section 24G process must be the first step in implementing tangible actions to rectify the impacts caused as a result of these illegal activities and implement appropriate remedial actions and penalties.  It is vital that an accurate assessment is made by an independent environmental consultant as to the exact length of road created, as thus far it has been estimations only.  It is also important for Aquila Steel to give an accurate time line as to when construction commenced, and what, if any environmental concerns were taken into account.  It is also important that a visual impact assessment is carried out, as this is of particular importance for Meletse Game Reserve, with the majority of the reserve in full view of Meletse Mountain, relies heavily on a sense of pristine environment.  Where roads have crossed water courses, the impact needs to be assessed with remedial action plans  The erosion potential of the newly created roads also needs urgent attention, with the potential impact on downstream water courses and developments.  Finally an accurate assessment is required in terms of the impact to endangered plant species and habitat destruction.  Aquila Steel must provide immediate and detailed information on the rehabilitation process, timelines and funds allocated thereto including:  Physical rehabilitation of the road surface and urgent erosion control.  Damage to vegetation and specifically mature trees and the rehabilitation thereof  Rehabilitation of any quarry sites What roads they intend to keep and details of a maintenance schedule with realistic budgeted funds indicated going forward.	25/03/2014	Geographic Information System (GIS) calculations were done and in total 32.89km of roads are present on-site (refer to Figure 7, Figure 8 and Figure 9). This includes 19.29km of constructed prospecting roads (in use); 1.95km of prospecting roads constructed (rehabilitated) and 11.65km of existing farm roads (widened). A total of 32.89km of roads form part of the Section 24G Rectification Application process, with a total surface disturbance of 33ha as cleared for the construction of roads and borehole sites.  Refer also to Figure 2 of the Section 24G EIR titled: "Map illustrating the gravel roads on the contravened site.  Section 1.3 of this Section 24G EIR provides information on the timeline of construction activities.  The Visual Impact Assessment report is attached in Appendix F9.  Impacts associated with stream crossings, erosion, endangered plant species and habitat destruction are described in Section 4.2 of this Section 24G EIR. This Section 24G will be submitted to LEDET.  Mitigation measures and rehabilitation requirements are included as part of the risk assessment in Section 4.2 of this Section 24G EIR, as well as the draft EMP (Appendix G).	
			It is Meletse's view that it is also important that Aquila Steel explain why and how a mining company of Aquila Steel's size, level of expertise and so-called integrity could allow such a massive deviation from the agreed limits.		The purpose of the Section 24G rectification application is to rectify the unlawful road construction and associated activities as undertaken by Aquila Steel. A timeline of the rectification process, including when the original application was submitted to the LEDET is provided within the Section 24G EIR.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.	
06/01/2014 Letter	Meletse Game Reserve	e explain why it did not have sufficient internal control measures in place to avoid such intentional and extensive ecological damage, or face the inevitable conclusion that it had no intention of	explain why it did not have sufficient internal control measures in place to avoid such intentional and extensive ecological damage, or face the inevitable conclusion that it had no intention of abiding by any limitations as set out by LEDET or DMR, thus making a complete mockery of the entire environmental management process, to the potential embarrassment of the various government departments responsible for the safeguarding of South Africa's environmental	25/03/2014	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  In this specific circumstances Aquila Steel's	
					Meletse also feels strongly that the imposed penalties should be significantly severe to avoid the inevitable perception that by purposefully performing an illegal environmental act Aquila Steel can exploit due process thus by virtue of the existing environmental impact, force government to rule in its favour for further mining rights, and avoid costly bureaucratic compliance processes.	



08/01/2014	Umhlaba	Andrew Nicholson	Umhlaba Environmental Consulting CC has been commissioned to act on behalf of Calshelf	This is acknowledged. Refer to Shangoni's responses
E-mail	Environmental		Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	(below) on the comments received from Umhlaba
	Consulting CC on		(hereinafter referred to as "the owners") in all matters relating to prospecting and mining activities,	Environmental Consulting CC.
07/01/2014	behalf of Calshelf		on portions of the Farms Buffelshoek 446 KQ, Buffelshoek 680 KQ, Donkerpoort 448 KQ and	
Letter	Investments 171 (Pty)		Dassiesrand 447 KQ, located within the Thabazimbi region.	
	Ltd, Calshelf		The owners land is adjacent to the land impacted by Aquila when construction the illegal	
	Investments 172 (Pty)		roads.Hence, the owner is an interested and affected party (I&AP). The owner utilises the land as	
	Ltd and Calshelf 173		a private game reserve. At the request of the owners, I have provided feedback on the "Section	
	(Pty) Ltd		24G notice of application for rectification", for Aquila Steel (South Africa) (Pty) Ltd, roads	
			constructed illegally on the remainder of the farm Donkerpoort 448KQ and Randstephne 455KQ,	
			Thabazimbi, Limpopo. The Limpopo Department of Economic Development, Environment and	
			Tourism (LEDET) reference number for the application is 12/1 /9-6/Section 24G/15-W1.	
			The roads created by Aquila to access drill sites have been the cause of much concern for the owners. The concerns revolved around the impacts associated with the excessive roads generated and the blasting activities used to create the roads, which have been raised to Aquila and LEDET as early as 2010 and on an ongoing basis since then. LEDET officials undertook a site	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
			visit on 20 October 2011. To date no tangible rectification actions have occurred.	



Limbiaha	Androw	Pookavound	The activities triggered in terms of the EIA Regulations,
Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty)	Nicholson	The roads created by Aquila to access drill sites have been the cause of much concern for a number of Interested and Affected Parties (I&AP's) within the local area. The concerns revolved around the impacts associated with the excessive roads generated and the blasting activities used to create the roads, which have been raised to Aquila and LEDET as early as 2010 and on an ongoing basis since then. LEDET officials undertook a site visit on 20 October 2011. To date no rectification actions have occurred.	2010 and included in this Section 24G EIR, have been elaborated upon in terms of the surface area associated with the prospecting roads. The surface area reflected within the Section 24G EIR includes surface disturbance associated with both road construction as well as areas cleared for drilling of prospecting boreholes. Refer to Section 2 in this Section 24G EIR for a description of activities as undertaken
Lia		According to the original approved environmental management plan for the Aquila prospecting activities, there would be between 1.6 to 3km of roads required to access 10 drill sites. No blasting activities were required in order to create the required roads. In reality, and according to an environmental performance audit commissioned by Aquila, over 30km of roads have been generated, using blasting activities, to access ~ 200 drill sites.	Geographic Information System (GIS) calculations were done and in total 32.89km of roads are present on-site (refer to Figure 7, Figure 8 and Figure 9). This includes 19.29km of constructed prospecting roads (in use); 1.95km of prospecting roads constructed (rehabilitated) and 11.65km of existing farm roads (widened). A total of 32.89km of roads form part of the Section 24G Rectification Application process, with a total surface disturbance of 33ha as cleared for the construction of roads and borehole sites.  Refer also to <i>Figure 2</i> of the Section 24G EIR titled: "Map illustrating the gravel roads on the contravened site.  The amended application form is attached in Appendix C1.
		This section 24G process must be the first step in implementing actions to rectify the impacts caused as a result of these illegal activities. The final outcome of this process should be the implementation of tangible rehabilitation activities of the illegal roads by Aquila.	Noted
		<ul> <li>The Section 24G process:</li> <li>Just for information purposes, below is a <i>brief</i> explanation of the Section 24G process:</li> <li>The process allows an applicant to admit implementing an illegal activity and to retrospectively legalise the activity, while been subjected to a fine from LEDET and a potential directive to implement appropriate remedial actions.</li> <li>The process involves:</li> <li>Appointment of an independent environmental assessment practitioner (EAP) (Shangoni).</li> <li>Submission of an application form (which has been completed).</li> <li>Once submitted, the authorities (LEDET) send a letter acknowledging the application and instructing the EAP to undergo a public participation process (in progress) and complete an Environmental Assessment Report. The name and content of this report may be dependent on the instruction provided by LEDET and the feedback provided by interested and affected parties (I&amp;AP's). In most cases it details how the applicant intends to rectify the impacts associated with the illegal activity.</li> <li>Once the report is submitted, LEDET will review the report, take a decision on the way forward, impose what they deem an appropriate fine and issue a directive on how to proceed.</li> </ul>	
	Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and	Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty)	Environmental Consulting Co no behalf of Calshelf Investments 171 (Py) Ltd. Calshelf Investments 172 (Py) Ltd. Calshelf Investments 173 (Py) Ltd. Calshelf Investments 174 (Py) Ltd. Calshelf Investments 175 (Py) Ltd. Calshelf Investments 176 (Py) Ltd. Calshelf Investments 177 (Py) Ltd. Calshelf Investments 177 (Py) Ltd. Calshelf Investments 177 (Py) Ltd. And Calshelf Investments 178 (Py) Ltd  According to the original approved environmental management plan for the Aquila prospecting activities, there would be between 1.6 to 3km of roads required to access 10 drill sites. No blasting activities were required in order to create the roads. In reality, and according to an environmental performance audit commissioned by Aquila, over 30km of roads have been generated, using blasting activities, to access ~ 200 drill sites.  This section 24G process: Just for information purposes, below is a brief explanation of the Section 24G process: Just for information purposes, below is a brief explanation of the Section 24G process:  The process allows an applicant to admit implementing an illegal activity and to retrospectively legalise the activity, while been subjected to a from LEDET and a potential directive to implemental assessment practitioner (EAP) (Shangoni). Submission of an application form (which has been completed).  Once submitted, the authorities (LEDET) send a later acknowledging the application and instructing the EAP to undergo a public participation process (in progress) and complete on the report is submitted, LEDET will review the report, take a decision on the way



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
08/01/2014 E-mail 07/01/2014 Letter	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	<ul> <li>The only information provided thus far, from the appointed independent environmental assessment practitioner, Shangoni Management Services (Pty) Ltd, is an email and letter.</li> <li>The following information from Shangoni is pertinent:</li> <li>The activity first commenced in September 2007.</li> <li>Commenting period is from 22 November 2013 up until 9 January 2014.</li> <li>All objections and comments must be copied to: The Head, Limpopo Department of Economic Development, Environment and Tourism, Section 24G Unit, Private Bag X 9484, Polokwane, 0700.</li> <li>Construction of the road was stopped once it was raised with the applicant.</li> <li>The applicant will and have used the road as a firebreak and to maintain the boundary fences.</li> <li>The road was constructed as per the requirements in the Mine Health and Safety Act, Act No. 29 of 1996.</li> <li>The road was constructed on a 1:8 slope with the uphill turns on a 1:9 slope in order to ensure safe handling of equipment on the roads.</li> </ul>		Information as provided is elaborated upon in this Section 24G EIR, with specific reference to Section 2 of the EIR.
			<ul> <li>My interpretation of the impacts of the illegal roads include:</li> <li>In order to provide an indication of the extent of the roads created over time, at the end of this letter, I have provided 4 Google Earth images which show the extent of the roads on specific dates. The first image available was from August 2007 and the latest image is September 2012.</li> <li>Although there is no indication of the length of roads created, previous correspondence has estimated up to 30km. The main impacts created as a result of the illegal roads include:</li> <li>A huge visual impact on surrounding landowners (for an extended distance) as a result of extensive scarring on the mountain. This is particularly important as some of the surrounding landowners use their properties for ecotourism purposes which rely on a sense of a pristine environment in and around the area.</li> <li>Roads crossing watercourses thereby impacting on watercourses and local catchment area.</li> <li>Impacts associated with increased possibility of erosion from the roads.</li> <li>Fragmentation of sensitive habitats.</li> <li>Potential of destruction of red date plants for the construction of the roads.</li> </ul>		Refer to Section 4.2 of this Section 24G EIR where the impacts (as mentioned) are assessed.
08/01/2014 E-mail 07/01/2014 Letter	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	Initial concerns: As limited information is provided, I can only provide limited initial concerns, including: The application indicates that the start date for the activities was September 2007, although on the August 2007 Google Earth image road construction has clearly commenced. This needs to be explained.		Geographic Information System (GIS) calculations were done and in total 32.89km of roads are present on-site (refer to Figure 7, Figure 8 and Figure 9). This includes 19.29km of constructed prospecting roads (in use); 1.95km of prospecting roads constructed (rehabilitated) and 11.65km of existing farm roads (widened). A total of 32.89km of roads form part of the Section 24G Rectification Application process, with a total surface disturbance of 33ha as cleared for the construction of roads and borehole sites.
			Shangoni indicate that Aquila will "use the road as a firebreak and to maintain the boundary fences". Again based on the Google Earth image the roads have been constructed to clearly access specific points on the property to implement prospecting activities and using the roads as a "fire break and to maintain boundary fences" is not the primary purpose. Fire breaks are usually made on property fences or at the foot of a mountain to prevent the fire from getting into the flat lands where it typically moves faster.		Only roads along the boundary fences act as firebreaks. The road to the top of the mountain allows for access to fires on the mountain and in cases in the past has acted as firebreaks if one considers that the fire did not cross the road which then limited the overall impact of the fire.



My recommendations going forward would be for Shangoni to:  1) Provide a copy of the application form submitted to LEDET:  1) Provide a copy of the application form submitted to LEDET:  2) Explain in greater detail the following information:  a. Details concerning the innelines for the construction of roads. Please advise as to when road construction commenced, how many roads were constructed per year from commencement of the sackility and the data so to when soon construction and advises were stopped.  b. Details of the length and width of treads research.  c. Details of the length and width of roads research.  c. Details of environmental considerations given during the construction of the roads.  d. Which specific roads act as fire breaks.  d) Provide an indication of the distance of the visual impact of the roads.  d) Provide a draft copy of the environmental assessment report which should detail how Aguils are going to rectify there illegal advisites to interested and affected parties for comment.  5) A minimum like blowing information should be contained within the draft environmental comment report.  5) A relation of the visual impact of the roads.  5) Provide a draft copy of the environmental assessment report which should detail how Aguils are going to rectify there illegal advisites to interested and affected parties for comment.  5) A relation of the visual impact of the roads.  5) Refer to the Visual impact Assessment Agent (attached as Appendix Fig. for visual impact of the sensibility of the habital tragmented by the liegal roads.  5) Refer to the Visual impact of the sensibility of the habital tragmented by the liegal roads.  6) Selection 24.0 Elfs. Reverse as the technical supporting of the comment of the provides interested and affected parties for comment.  5) Refer to the Visual impact assessment report which should detail how Aguils are going to rectify there illegal advisites to interested and affected parties for comment.  6) Selection 24.0 Elfs. Reverse as the technical supporting of the c
a. Details concerning the timelines for the construction or treads. Peesa advise as to when road construction commenced, how many roads were commenced to the activity and the date as to when road construction activities were stopped.  b. Details of the length and width of roads created.  c. Details of environmental considerations given during the construction of the roads.  c. Details of environmental considerations given during the construction of the roads.  d. Which specific roads act as fire breaks.  d. Which specific roads act as fire breaks.  3) Provide an indication of the distance of the visual impact of the roads.  4) Provide a draft copy of the environmental assessment report which should detail how Aquila are going to ready there illegal activities to interested and affected parties for comment.  5) All minimum the following information should be contained within the draft environmental assessment report:  a. A visual impact assessment report.  5) All minimum the following information should be contained within the draft environmental assessment report:  a. A visual impact assessment report.  b. Details of the sensitivity of the habitat fragmented by the illegal roads on the surrounding area (this should be represented visually). This study should be completed by an independent specialis.  c. Details of the sensitivity of the habitat fragmented by the illegal roads.  6) (A) A map providing:  d. A map providing:  ii. An indication of which roads are actual fire breaks and used to maintain boundary fencess.  iii. Which roads have been rehabilitated.
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ii. Which roads have been rehabilitated.  firebreaks. The road to the top of the mountain
iii. Which roads will be rehabilitated. allows for access to fires on the mountain and in
iv. Which roads does the applicant intend to remain.
considers that the fire did not cross the road which
then limited the overall impact of the fire.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
08/01/2014 E-mail 07/01/2014 Letter	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf	Andrew Nicholson	<ul> <li>e. A programme linked to timelines of which roads are going to be rehabilitated.</li> <li>f. Detailed indication of how the road will be rehabilitated. A definition of a successful rehabilitated road should be provided.</li> <li>g. Details on how the impacts associated with the roads they intend to remain, will be minimised.</li> <li>k. A maintenance programme for roads that remain</li> </ul>		5e, f, g & k) Rehabilitation and maintenance requirements are included as mitigation measures in the risk assessment table in Section 4.2 of this Section 24G EIR. Also refer to the draft EMP (Appendix G).  A detailed rehabilitation plan with regards to the
	Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd				roads will be developed by a specialist registered at the South African Council for Natural Scientific Professions. (Refer details as per Section 4.2 of report)
			h. A storm water management plan.  i. An erosion management plan.		<ul><li>5h) A storm water management plan is attached as Appendix F6.</li><li>5i) Mitigation measures related to erosion control are included in the risk assessment table in Section 4.2</li></ul>
			j. A monitoring programme for rehabilitated roads.		of this Section 24G EIR.  5j) Monitoring measures are included in the risk assessment table in Section 4.2 of this Section 24G EIR.
			I. The budget required for the rehabilitation of the roads and the ongoing monitoring / maintenance programme.		5l) The cost of rehabilitation is estimated at R150 per linear meter of the road, while the cost of maintenance is estimated to be R30 per linear
			Once the above information is provided, I can provide additional comments.		meter. Due to the sensitivity of the areas disturbed, this can only be confirmed once a detailed rehabilitation plan (in consultation with a fauna specialist) has been developed.



Date and Manner	Interested	Contact	Comments	Date of	Response
of Comment	Party (IAP)	Person		Receipt by Shangoni	
Date and Manner of Comment  8 & 9 January 2014 Letters	and Affected	E.B Nieuwoudt; Dr. W.J Schacks; Louis van der Watt; Christopher York	My expectation is that Aquila implements immediate tangible rehabilitation activities of the illegal roads. As part of Rooiberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC. Please see attached to my letter a copy of the feedback from Umhlaba. From the Umhlaba review, the following issues have been raised which require action / feedback.  1) Provide a copy of the application form submitted to LEDET. 2) Explain in greater detail the following information; a. Details concerning the timelines for the construction of roads. Please advise as to when road construction commenced, how many roads were constructed per year from commencement of the activity and when road construction activities were stopped. b. Details of the length and width of roads created. c. Details of the length and width of roads created. d. Which specific roads act as a fire break. 3) Provide an indication of the distance of the visual impact of the roads. 4) Provide a draft copy of the environmental assessment report which should detail how Aquila are going to rectify there illegal activities for comment. 5) At minimum the following information should be contained within the draft environmental assessment report; a. A visual impact assessment – detailing the extent of visual impact resulting from the illegal roads on the surrounding area. (this should be represented visually). This study should be completed by an independent specialist. b. Details of the river / non perennial stream that the roads have crossed. c. Details of the river / non perennial stream that the roads have does the applicant intend to leave. e. A programme linked to timelines of which roads are going to be rehabilitated and when. f. Detailed indication of which roads are actual fire breaks and used to maintain boundary fences. ii. Which roads does the applicant intend to leave. e. A programme linked to timelines of which roads are going to be rehabilitated and when. f. Detailed i	Acknowledgement of	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to response (above) to exact comments received from Umhlaba Environmental Consulting CC.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
8 & 9 January 2014 Letters	Rooiberg Bewaria	E.B. Nieuwoudt	The illegal construction of the roads and the unauthorised blasting that was used in the process, form the single biggest bone of contention as far as the critic against Aquila and its prospecting activities of the Interested and Affected Parties are concerned. The magnitude of the physical scars left by this illegal action is immense. All action on the side of Interested and Affected Parties to get responsibility from Aquila or action from Government has been to no avail. We urge you to take action against these illegal activities. I have personally met with LEDET official and delivered documents regarding these and other transgressions to the LEDET offices in Polokwane (detail available to LEDET on request). To date, I have had not feedback.  The outcome of this process should be for LEDET to take the strongest possible actions against Aquila for the blatant transgressions of the laws of the country and now admitting to it. It will be a travesty of justice f they are allowed to get away with this. Apart from taking responsibility for this blatant transgression in a visible fashion, the least action taken by Aquila should be to rehabilitate		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
8 January 2014	Rooiberg Bewaria	E.B. Nieuwoudt	the illegal roads to their pre-disturbed state.  As members of Rooiberg Bewaria and landowners affected by these blatant transgressions, we have on numerous occasions raised our concerns and called for action, not just with Aquila in public meetings and numerous correspondence, but also directly with LEDET and the Department of Minerals and Energy. To date, we have not received any responses or action taken. We strongly oppose the way that Aquila operates to now want to rectify blatant transgressions in a manner that not only safe them time, but also money. They did what they wanted to with no regard doe the environment and the landowners in the area. Now that they achieved that, they merely want to go through a rectifying exercise to move on. We see no remorse or visible actions from Aquila to take responsibility for these blatant transgressions.  Taking this into account, we will appreciate some tangible action regarding this and we urge Aquila to take responsibility for their actions in a way that can co-exist with the environment and the landowners in the area. The outcome of this process should be action taken by Aquila to rehabilitate the illegal roads to their pre-disturbed state. We again repeat our plea to LEDET to take the strongest possible action against Aquila for blatantly ignoring all reasonable requests not to damage the environment like they did. In the process, they acted against the laws of the country		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
8 January 2014	Rooiberg Bewaria	Dr. W.J Schack	and should face up to it.  A mine on Meletse Mountain will forever disturb the sense of place in this unique pristine region of our country.  Aquila Steel casts a blind eye on the fact that the nature based local economy of the region, namely game farming, ecotourism and conservation will be severely affected, if not destroyed, if the company carries on with its intended activities.  The outcome of this process should be action taken by Aquila to rehabilitate the illegal roads to their pre-disturbed state, and then to withdraw their intention to open up a mine here completely		Please note that your concerns appear to relate to the Meletse Iron Ore Project. The purpose of this Section 24G EIR is to describe and assess the impacts associated with the previously constructed road network (in support of a rectification application to LEDET). The impacts associated with the proposed activities will be included in the Scoping Report and EIR (application for environmental authorisation for proposed activities associated with the project.  The impacts (associated with the previous construction of the prospecting roads) are discussed in Section 4.2 of this Section 24G EIR.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
8 January 2014	Rooiberg Bewaria	Christopher York	One of our major concerns is still the impact that mining activities will have on our businesses.  Major impact was felt with prospecting with drilling and blasting disturbing the animals with them hitting fences and running like mad. This will have an impact on their well-being and as a consequence their breeding capabilities.		An economic specialist was appointed in order to identify economic-related impacts (refer to Appendix F14 for the resultant report).
			It is also of concern that Aquila knowingly was breaking the law yet can just be allowed to amend an application and all is good. If they can be allowed to get away with something like this at a prospecting stage what will be the transgressions that can be expected once full blown mining takes place?		Refer to Section 4.2 of this Section 24G EIR where environmental impacts are assessed. All findings from specialist assessments have been considered in the drafting of this impact assessment table, and all specialist reports can be viewed (Refer Annexure F)
			The amounts put aside for rehabilitation are so meagre that it will be impossible to rehabilitate one twentieth of what is required. How is this to be rectified?  The outcome of this process should be action taken by Aquila to rehabilitate the illegal roads to their pre-disturbed state.		
Registration and response form dated 14/1/2014 and 2 identical letters (dated 08/01/2014 and 26/03/2014)	Rooiberg Bewaria	Louis van der Watt	In the breeding of exotic game we are a member of the Trophy Breeders group with an annual auction which has generated in excess of R60 million per year in the sale of exotic game over the last two years. We have invested more than R100 000 000 on exotic game and infrastructure on the farm.  We are directly affected by the illegal roads constructed as part of the prospecting activities that have taken place by Aquila Steel (S Africa) (Pty) Ltd for their Meletse Iron Ore Project.  The roads will have a visual and noise factor on the whole area which will have a negative impact on the hunting operations.  Increase in traffic, dust and noise will add significantly to the stress of exotic game. This will have a negative effect on the breeding of the animals.  On a personal level the increased usage of the roads will have an adverse effect on our use and enjoyment of our property.  Security and other social problems will also have an effect.		Refer to Section 4.2 of this Section 24G EIR where environmental impacts are assessed. All findings from specialist assessments have been considered in the drafting of this impact assessment table, and all specialist reports can be viewed (Refer Annexure F). This includes specific studies including but not limited to Visual (Appendix F9), Traffic (Appendix F18), Air Quality (Appendix F7), Economic (F14), Noise (Appendix F8) and Social (Appendix F12)
			Various as per all previous communication. Brief summary of concerns:  Infrastructure  Noise pollution  Dust pollution  Easthetically  Effect on value of farm  Privacy  etc.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Impacts associated with the unlawful road construction activities are included in Section 4.2 of this Section 24G EIR.
8 January 2014 Letter	Gilpie's Lodge CC (and a Member of Rooiberg Bewaria)	Pierre E. Mostert	As the owner of portion 1 of the Farm Rebelsig 611 KQ, I am directly affected by the illegal roads constructed as part of the prospecting activities that have taken place by Aquila Steel (S Africa) (Pty) Ltd for their Meletse Iron Ore Project.  My expectation is that Aquila implementes immediate tangible rehabilitation activities of the illegal roads.  As part of Rooiberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC. Please see attached to my letter a copy of the feedback from Umhlaba.	25/03/2014	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
31/01/2014 Registration and Response form	Champion Wildlife	Dr. Stuart McKernan	We are a privately owned business in the area, and future landowners, servicing a greater community of reserves where wildlife management & environmental preservation is core to the community. There has been considerable investment in time, effort & money such that such environmental friendly practice is sustainable not only in the short-term, but for generations to come; a period far exceeding that envisioned by Aquila Steel and prioritised specifically for the benefit of conservation and the local community.  -We are concerned that the intentions of Aquila Steel is purely for the benefit of itself & its shareholders; and that its operations will have severe negative impacts of the surrounding environment & the communities 7 businesses that depend on the environment.  -We are deeply concerned that the negative impacts of mining will continue long after the mine has closed.  -We are deeply concerned that such mining activity is only the beginning of the exploration and expansion of such operations with negative environmental consequences.  -We are deeply concerned that increased human presence & habitation the mine will lead to increased criminal activity on the surrounding reserves such as burglary, vehicle theft, subsistence & rhinoceros poaching.  -We are concerned about the severe impact of air ad noise pollution.  -We are severely concerned about the mine's influence on water quality & availability to surrounding properties – the area is already characterised by irregular rainfall.  -We are concerned about the production of sewerage, and general & hazardous waste.  -We are severely concerned about the radical increase in motor & truck activity of the roads which will dramatically increase dust pollution on neighbouring farm (especially in the dry season) and place unrelenting pressure on the already substandard dirt roads.  -We are sceptical of the value of the various licences (e.g. water, waste, emissions) and that all they do is sanction environmentally-unfriendly practices.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET as a draft report.  These concerns are however related to the proposed Meletse Iron Ore Project. The purpose of this Section 24G EIR is to describe and assess the impacts associated with the previously constructed road network (in support of a rectification application to LEDET).  The impacts associated with the proposed activities relating to mining will be included in the Scoping Report and EIR (application for environmental authorisation for proposed activities associated with the project).  Section 4.2 of this Section 24G EIR includes mitigation measures and rehabilitation commitments related to impacts associated with the unlawful construction of the roads for prospecting activities.
12/03/2014	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	At the request of Rooiberg Bewaria, I have provided feedback on the "Section 24G documentation", for Aquila Steel (South Africa) (Pty) Ltd, gravel roads constructed illegally on the remainder of the farm Donkerpoort 448KQ and Randstephne 455KQ, Thabazimbi, Limpopo.  The Limpopo Department of Economic Development, Environment and Tourism (LEDET) reference number for the application is 12/1 /9-6/Section 24G/15-W1.  The feedback is based on reviewing the information provided on the Shangoni website on 11th March 2014. Shangoni are Aquila's appointed independent environmental assessment practitioners (EAP). I have reviewed the following documents in detail;  The Section 24G Technical Report  The Section 24G Environmental Management Plan  The storm water management plan  The visual impact assessment report.  The remainder of the documents have been previously reviewed, as it is the same information previously provided for the Aquila mining right application documents. Therefore it has not been reviewed again in detail. In order to provide LEDET feedback on the other documents, I have attached the previous feedback submitted to the DMR which dealt with these additional documents. There are a number of concerns I have with regards to the process and information presented.	25/03/2014	Please note that there has been extensive review of the background information as per the updated specialist reports, which have been included within this Section 24G EIR.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
12/03/2014	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	Linking of the Section 24G process to the proposed mine:  This Section 24G process is being intrinsically linked to the future proposed Aquila mining operation. I feel that the EAP is presenting information in a manner that implies that the mine is a foregone conclusion and therefore the rehabilitation activities of the illegal roads can consider the future impact of the proposed mine and therefore avoid the majority of rehabilitation requirements of the roads.	25/03/2014	The tables presented in Section 4.2 of this Section 24G Environmental Impact Assessment report (EIR) reflects mitigation measures related to impact management and rehabilitation associated with the unlawful road construction. In the identification of risk and mitigation, strong consideration towards the various specialists appointed to this project was given. The report is presented with limited consideration towards proposed mining and related activities.
			None of the specialist studies provided have been specifically undertaken for the impacts associated with the illegal roads. For example, the storm water management plan and the visual impact assessment are all compiled for the intended future mine.  This is a concern as firstly the proposed mine is busy undergoing the various environmental legal application processes and no authorisation has been granted. Secondly if the mine does obtain all the correct legal authorisations it could be between a 5 – 10 year period before full scale mining is commissioned. During this time the impacts associated with the roads could have multiplied.		Specialists (including the visual specialist) were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction in the specialist reports. The Section 24G EIR has thus been updated to include information as to the impacts associated with the unlawful road construction (refer to Sections 4.2 of this Section 24G EIR). Also refer to the Visual Impact Assessment report, included in Appendix F9.
			I would like to see the technical report, environmental management plan and the applicable		The Storm Water Management Plan has also been revised to reflect management measures specifically related to the road construction for prospecting. Refer to Appendix F6 for a copy of the amended Storm Water Management Plan.  The report is presented with limited consideration
			specialist reports written in a manner that assumes there is no mine. By doing this, I feel there will be a better chance of obtaining a fair reflection of the impacts caused and rehabilitation requirements of the illegal roads.		towards proposed mining and related activities, although (to some extent) one has to consider possible future activities when assessing risk and mitigation.
12/03/2014	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty)	Andrew Nicholson	Justification for the illegal activities  The motivation of why Aquila proceeded with illegal activity was due to the fact that the Department of Mineral and Resources (DMR) had authorised the prospecting activities. However Shangoni failed to expand on the fact that within the approved EMP for prospecting there was mention that, between 1.6 to 3km of roads would be created, for approximately 10 boreholes. However, more than 30km roads for +/- 200 boreholes, using blasting activities was undertaken by Aquila.	25/03/2014	The activities triggered in terms of the EIA Regulations, 2010 and included in this Section 24G EIR, have been elaborated upon in terms of the surface area associated with the prospecting roads. The surface area reflected within the Section 24G EIR includes surface disturbance associated with both road construction as well as areas cleared for drilling of prospecting boreholes. Refer to Section 1.3 and Section 2 in this Section 24G EIR.
	Ltd				Geographic Information System (GIS) calculations were done and in total 32.89km of roads are present on-site (refer to Figure 7, Figure 8 and Figure 9). This includes 19.29km of constructed prospecting roads (in use); 1.95km of prospecting roads constructed (rehabilitated) and 11.65km of existing farm roads (widened). A total of 32.89km of roads form part of the Section 24G Rectification Application process, with a total surface disturbance of 33ha as cleared for the construction of roads and borehole sites.
					Refer also to <i>Figure 2</i> of the Section 24G EIR titled: "Map illustrating the gravel roads on the contravened site.



			Inevitability of the roads  At the end of the technical report (p133) Shangoni indicated that the need and use of the road was inevitable to undertake the prospecting activities as it was the only way to reach the top of the mountain.  I disagree with this statement. I was involved with a client who wanted to undertake drilling activities on a highly sensitive mountain in the Eastern Cape. The biggest impact associated with the activities was the creation of roads to access the desired drill pads. As a result of potential impacts associated with the roads, the client only cleared areas on the mountain for the drill rig and then used a helicopter to transport the drill rig from one position to the next, thereby avoiding		Your concern in this regard is noted. However, the activity has occurred and therefore the purpose of this Section 24G EIR is to identify the impacts and appropriate mitigation measures associated with the activities previously undertaken.
			the need to create unnecessary roads.  Capturing of all EIA triggers:  There is a possibility that the EAP has not captured all the illegal activities implemented by Aquila. It is clear that a number of roads have crossed water courses and an extensive amount of land was cleared for the various drill pads for prospecting. The original approved EMP for prospecting authorised for 10 boreholes whereas according to an environmental performance audit commissioned by Aquila over 200 drill sites where used. The additional 190 drill pads results in a lot more land clearing as was authorised in terms of their prospecting EMP.  I would suggest that the EAP re-evaluates the list of illegal activities (against both the 2006 list and the 2010 list) and motivate why triggers associated with activities taking place within a water		The list of triggered activities were reviewed and the description of activities undertaken was amended to reflect both the construction of roads as well as surface disturbance associated with borehole sites. Refer to Appendix C1 of this Section 24G EIR. The amended application form was submitted to LEDET on 12 June 2014.
12/03/2014	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	<ul> <li>course and land clearing activities are not included as part of the Section 24G process.</li> <li>Under emphasising the extent of the impact:  I feel that the technical report is written in a manner which understates the extent of the illegal activities. This conclusion is reached as a result of;  The instruction from LEDET to proceed with the environmental assessment report only refers to "a gravel road", when in reality a whole road network is created.</li> <li>There is no mention of the extent of illegal roads created until page 131 of the report (which can be easily missed. This is only provided as a result of answering a direct question raised by an interested and affected party (I&amp;AP).</li> <li>There is a whole section in the report which aims to detail the "nature and extent" of the illegal activities, it stands to reason that within this section of the report it should be clearly emphasised the extent of the roads which have been created.</li> <li>No mention that a number of the roads were created from illegal blasting activities. The fact that blasting was undertaken indicates that the road will always now represent a visual scar. This is irreversible.</li> <li>Eventually (on page 131 of 135) there is an indication that the illegal roads are +/- 22 km in length, even though the same independent consultant (Shangoni) stated in an environmental performance audit that over 30km of roads have been created.</li> <li>There is an indication that the total extent of the physical disturbance created as a result of the roads is 1563.4310 m2. This implies that the roads (22km worth) are around 0.07m (or 7cm) wide (1563.431 / 22 000 = 0.071. This is untrue.</li> <li>The authorities should be made aware of the true extent of the illegal activities that took place. The lack of mentioning the extent of the roads within the section specifically provided to detail the nature and extent of the illegal activities is in my opinion a major shortfall.</li> </ul>	25/03/2014	The amended application form as submitted to LEDET on 12 June 2014, provides more detail in terms of the extent of activities undertaken.  The relevant sections in the Section 24G EIR have been revised in order to elaborate on the extent of the road-construction. Refer also to Sections 1.3 and Section 2 of this EIR.  The effects of blasting are included in the environmental impact assessment section of this EIR (Section 4.2)  The list of triggered activities were reviewed and the distance and area associated with the roads constructed and borehole sites established has been revised.  All roads as disturbed, irrespective as to whether such is indicated as rehabilitated, is viewed by Shangoni not rehabilitated (thereby need to still undergo same rehabilitation requirements as for all other disturbed areas) – Refer to Section 4.2 of the Section 24G EIR.



## Lack of commitment to rehabilitation and lack of proof of rehabilitation:

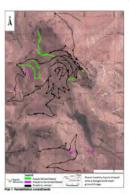
In order to emphasise the lack of commitment to rehabilitation, I have included the following plans (obtained from Aquila Section 24G documentation) at the end of this correspondence.

Please note that all maps as referred to in the letter, as

obtained from the draft Section 24G EIR have been

updated for future reference.

- Plan 1: A map showing which roads have (apparently) been rehabilitated, which will be left (assuming the mine proceeds) and which roads will be subjected to rehabilitation.
- Plan 2: A map (included within the Section 24G documents) showing the type of roads and the existing water courses.
- Plan 3: A map from the storm water management plan showing the infrastructure and intended haul roads required for the proposed mine.



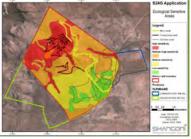
Plan 1: Rehabilitation commitments



Plan 2: Map Type of roads created and an indication of existing water courses (contained within the Section 24G documents)



Plan 3: Plan showing the proposed mining infrastructure as captured within the storm water management plan (Please note the positioning of the intended haul road)



Plan 4: Showing how the illegal roads are generally located in the most ecologically sensitive area



Date and Manner of Comment	Interested and Affected	Contact Person	Comments	Date of Acknowledgement of	Response
	Party (IAP)			Receipt by Shangoni	
12/03/2014	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	Plan 1 clearly indicated that a number of sections of the illegal roads have already been rehabilitation. However there is no description of what rehabilitation activities have been implemented and no proof in the form of before and after photographs.  It would add a lot of value to the proposed rehabilitation activities to understand what processes were implemented to rehabilitate the roads and how successful the process was and what lessons can be learnt for future rehabilitation. Based on a history of misinformation provided by Aquila, I would also insist on proof of the rehabilitation activities should be provided.  It is disappointing to note the limited commitment to implement future rehabilitation activities in plan 1. The lack of commitment is all based on the presumption that the mine will proceed. I would argue that the report should reflect what is required assuming no future mining takes place and then, should the mine be approved, the report can be updated.  Plan 2 includes a road highlighted in yellow which according to the legend is a "mine road". Once again, making the assumption that the mine is a foregone conclusion.  When reviewing the storm water management plan, the maps (plan 3) contained within this document which show the intended mining infrastructure show a completely different new proposed haul road to access the proposed mining activities.  Thus implying that the "mine road" shown in the Section 24G application is not required. I therefore would recommend that the "mine road" be included as one of the roads requiring rehabilitation.	Receipt by Shangoni 25/03/2014	Mitigation measures have been included in Section 4.2 with regards to rehabilitation requirements and commitments.  The project description (Section 2) has been written in a manner that assumes there is no mine.  Furthermore, specialists were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction in the specialist reports. The Section 24G EIR has thus been updated to include information as to the impacts associated with the unlawful road construction (refer to Sections 4.2 of this Section 24G EIR). Also refer to the Visual Impact Assessment report, included in Appendix F9.  The Storm Water Management Plan has also been revised to reflect management measures specifically related to the road construction for prospecting. Refer to Appendix F6 for a copy of the amended Storm Water Management Plan. Also, Figure 10 (as contained in the mentioned plan) depicts the location of the prospecting roads (already constructed).  It is noted that the information provided as part of "Plans 1 and 2" referred to, could have created a misinterpretation with regards to the roads constructed previously and the roads to be used for future mining and related activities. Refer to Figure 7, Figure 8 and Figure 9 of his Section 24G EIR distinguishing between the roads constructed by Aquila Steel, the roads that were undertaken by Aquila Steel and the section(s) of road rehabilitated by Aquila Steel thus far). Note that the road as indicated to be rehabilitated is viewed for purpose of rehabilitation requirements not to be completed.  It is however, the intension of this Section 24G EIR to serve as the technical supporting document for the application of 32.89 km of roads in total.



Date and Manner of Comment	Interested and Affected	Contact Person	Comments	Date of Acknowledgement of	Response
	Party (IAP)			Receipt by Shangoni	
12/03/2014	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	Inadequate consultation: Public consultation falled to engage with the local Sangoma's who have indicated to the landowner how sacred the Meletse Mountain is to them. This is a flaw of the consultation process as it has not been all inclusive.  The EAP was made aware of the implications of the Sangoma's concerns by a landowner on 10th February 2014. It is important that all views of the community are obtained and considered. Understanding the cultural significance of the mountain to the local communities is imperative in understanding the impact caused as a result of the roads.	25/03/2014	"An attempt to consult with religious leaders took place. The applicant organised a meeting to consult with the local community Shangomas and spiritual leaders as far back as 15 October 2012. The meeting request was accepted by Ms Yvonne Kgotlang and as the local user she was organising the other users to attend. On the day they decided not to attend."  The traditional healers are included in the project's IAP database and are consulted as part of the current public participation process (refer to Table 47: Meletse Mountain Religious Interest).  Furthermore, an Anthropologist was appointed on the 17th of March 2014, who consulted directly with the traditional healers namely Yvonne Kgotholong in particular. The specialist report is attached to this Section 24G EIR as Appendix F16.  Two further community meetings were held on the 12th of June 2014 (at Rooiberg and Regorogile), and the traditional healers were notified telephonically prior thereto (as per list obtained by Anthropologist). Refer attendance list in Appendix E7.



Date and Manner	Interested	Contact	Comments	Date of	Response
of Comment	and Affected Party (IAP)	Person		Acknowledgement of Receipt by Shangoni	
12/03/2014	Umhlaba	Andrew Nicholson	Inadequacies of the report:	25/03/2014	
12/00/2014	Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty)	Audiew (violioison)	There are a number of inconsistencies / misleading information presented within the technical report. Examples include;  Statements such as:  "Immediate adjacent land is utilized for agricultural activities. Agricultural activities in the area can be divided into three broad categories, namely irrigation farming, dry land crop production and cattle and game farming. Crops producted in the area include wheat, soya, maize, cotton, sunflower, sorghum, red pepper and a variety of fruit and vegetables. Livestock include cattle,	25/00/2014	Section 6.3.1.2 of this Section 24G EIR has been updated to reflect this information.
	Ltd		goats, pigs and game".  Immediately adjacent to the property owned by Aquila is a Nature Reserve in the final stages of		This is acknowledged.
			been proclaimed and farms are used for rare game breeding.		
			One of the most significant impacts of the road is the visual impact resulting in a change of sense of place. On pages 82 and again on page 132 the report clearly implies that a visual impact assessment has been completed and presented in Appendix 9. Upon enquiring with Shangoni about the availability of the visual impact assessment report the following response was provided; "We are aware that the visual impact assessment report is not on our website. As reflected in the Section 24G technical report annexure list, this document is still in draft format and is being finalised. We will circulate it as part of the MPRDA EMP."  If the report is not available it should not be referenced within the document distributed for review. It is acknowledged that the report was subsequently made available on the 13th of March 2014.		The specialist reports associated with this Section 24G EIR are again made available to the IAPs for review as part of this Section 24G EIR.



Date and Manner	Interested	Contact	Comments	Date of	Response
of Comment	and Affected Party (IAP)	Person		Acknowledgement of Receipt by Shangoni	
12/03/2014	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	Impacts:  The list of impacts on page 17 fails to mention that a number of roads were constructed over a number of water courses which will have resulted in the impeding of a water course.  As mentioned in previous correspondence the most significant impacts associated with the illegal roads can be summarised as follows:  A huge visual impact on surrounding landowners (for an extended distance) as a result of extensive scarring on the mountain. This is particularly important as some of the surrounding landowners use their properties for ecotourism purposes which rely on a sense of a pristine environment in and around the area.  Roads crossing watercourses thereby impacting on watercourses and local catchment area. Impacts associated with increased possibility of erosion from the roads.  Fragmentation of sensitive habitats. See plan 4 which shows that the majority of roads fragmented the habitat regards as most sensitive.  Potential of destruction of red data plants for the construction of the roads.  The snippet below provides an indication of the sensitivity of the land impacted as a result of the illegal roads.  The threatened pteridophyte Chellanthes deltoidea subsp. silicicola was confirmed from the Loudetia flavida – Monocymbium ceresiiforme grassland of the mountain summit. This species is restricted to the rook crevices and sheltered soil pockets of the large boulders that are located in open grassland. Given its small size and the habit of shrivelling during dry periods, it is often overlooked. It is currently known from only nine localities with an area of occupancy of 2-5 km2. The estimated total population size is between 600 – 800 individuals (Raimonde et al., 2009). I would urge that the information contained within my feedback above is used in ensuring that appropriate measures are implemented by Shangoni and LEDET to ensure that Aquila rehabilitate the impacts caused by the illegal activities. Furthermore, that steps are taken to ensure that Aquila rehabilitate the impacts caused by the illegal a	25/03/2014	Refer to Sections 2.2 where reference is made to the water use activities that are being applied for as part of the Integrated Water Use License Application (IWULA). Section 4.2 includes a section on the impacts associated with the construction of roads within drainage lines.  The mentioned impacts were identified and assessed as part of the specialist studies conducted and included as such in the risk assessment in Section 4.2 of this Section 24G EIR.  This is confirmed as obtained from Section 3.6 of this Section 24G EIR.  Refer to mitigation measures included in the risk assessment table in Section 4.2 of this Section 24G EIR.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
12/03/2014 E-mail	Umhlaba Environmental Consulting CC on behalf of Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd	Andrew Nicholson	I have noted that Shangoni have amended there Section 24G application to LEDET and this amended application was submitted on 24 January 2014.  Please can you advise; Why an amended application was submitted? What is the difference between the first application and the amended application?  Appendix 9 (visual assessment) is not on your website. Please upload and confirm to everyone that it is available for viewing.	13/03/2014	"Thank you for your email.  The Section 24G application form was amended because the roads extend beyond Donkerpoort to Randstephne. The first application form only included the roads on Donkerpoort."  Response sent through via e-mail at the time on 12/03/2014:  "We are aware that the visual impact assessment report is not on our website. As reflected in the Section 24G technical report annexure list, this document is still in draft format and is being finalised. We will circulate it as part of the MPRDA EMP."  Please take note that all specialist reports have been uploaded onto Shangoni's website, along with an
24/03/2014 E-mail	Gilpie's Lodge CC (and a Member of Rooiberg Bewaria)	Pierre E. Mostert	As the owner of portion 1 of the Farm Rebelsig 611 KQ, I am directly affected by the illegal roads constructed as part of the prospecting activities that have taken place by Aquila Steel (S Africa) (Pty) Ltd for their Meletse Iron Ore Project.  My expectation is that all parties concerned do the right thing and comply in all aspects to the letter of the law and pay urgent attention to the views of the various reports and comments from interested and affected parties.  As a member of Rooiberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC. Please see attached to my letter a copy of the feedback from Umhlaba.  As I & AP, I am concerned about the following:  1) Our property falls within the prospecting rights of Aquila Steel (S Africa) (Pty) Ltd.  2) Aquila Steel (S Africa) (Pty) Ltd. is currently exercising their rights to scoping prospecting on our property with my co-operation.  3) I do not know what this will lead to, but already fear that should such prospecting progress, that the same non-conforming activities, as experienced with their current project(s) may occur on this land and probably other areas within their prospecting tenements.  4) It is beyond me that the state of affairs as set out in the numerous correspondences and meetings held between all affected parties have led to absolutely nothing! No action, no reprimand or feedback from any authoritative sector to at least show some concern regarding I & AP's in this whole matter.  5) I fear that if no action is taken to hold Aquila Steel (S Africa) (Pty) Ltd. to account, any future operations of similar nature will have the same if not worse consequences.	25/03/2014	Shangoni's response to Umhlaba Environmental Consulting CC's letter is included above.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Please refer to Section 6 of the Section 24G EIR where the public participation process is described and various sections within the Section 24G EIR where IAP comments have been reflected.



of Commentand Affected Party (IAP)PersonAcknowledgement of Receipt by Shangoni24/03/2014Rooiberg Home Owners AssociationPhillip NelPlease register my objection on behalf of the following A&I parties;25/03/2014Rooiberg Clinic Committee• L.P. Nel • Rooiberg Home Owners AssociationYour concerns are acknowledged and Section 24G EIR that will be submittedRefer to Section 4.2 of this Section	
Owners Association  • L.P. Nel  Rooiberg Clinic Committee  • Rooiberg Clinic Committee.  • Rooiberg Clinic Committee.	
Our previous objections centered around road use, water contamination and ecological matters.  We underwrite the attached document by UMHLABA Consultants (refer to comments below).  On behalf of the owners of SARPHC Properties (Pty) Ltd, known as Meletse Game Reserve, we hereby object to the granting of the Section 24G application based on the following grounds:  Insufficient consultation It has come to the author's attention that there is a community of traditional Sangomas or traditional healers and other local community members that have used the Galkop caves since time immemorial to perform traditional representing official, about the closure of the caves or their intention to mine the surrounding area. Many of the community members approached by the author expressed shock and dismay that they were never informed of events, and particular simals as to the fact that rule caves was summarily denied. Even worse was the major scarring and desceration of the mountain, which is held in high sacred regard by this community. Many of these community members have limited access to to computers and internet, and live far out of reach of conveniences such as newspapers and government gazette notices.  Our peakl of the owners of SARPHC Properties (Pty) Ltd, known as Meletse Game Reserve, we hereby object to the granting of the Scotton 24G application based on the following grounds:  Insufficient consultation  It has come to the sunthor's attention that there is a community member service the scale of the consultation and the surrounding times have used the Galkop caves since the dark page of the scale of the consultation and the surrounding times have ever been consulted, about the closure of the caves was summarily denied.  Even worse was the major scarring and desceration of the mountain, which is held in high sacred regard by this community. Many of these local community members are surrounded in database and are consulted as part of participation process (refer to Take Mountain Religious Interest for the fact that t	eaders took place.  consult with the trual leaders as far attend. On the day  the project's IAP the current public ble 47: Meletse database).  appointed on the directly with the Kgotholong in



24/03/2014	General Manager of Fred Stow	Environmental damage	25/03/2014	Your concerns are acknowledged and form part of this
24/03/2014 E-mail	General Manager of Meletse Game Reserve	Environmental damage  It is clear from the reports and images provided that Aquila far exceeded its mandated road length, without permission. In the author's view this represents a gross and flagrant disregard for environmental process. A large well-resourced multi-national company such as Aquila should have understood the importance of such processes prior to commencement and provided sufficient internal capacity such as an environmental control officer to ensure that such transgressions are simply not possible.  This, especially as Aquila emanates from Australia where it would have to abide by extremely stringent environmental legislation and authorisation prior to commencement of such activities. To assume that such actions are so trivially excused and remedied in South Africa constitutes in the author's opinion, a gross lack of indigenous respect, tantamount to economic imperialism.  South Africa's environmental legislation is designed and implemented to protect and support the people and natural environment of South Africa and ITS people. It is NOT merely an inconvenient, trivial breaucratic side-show.  It is the author's humble opinion that the nature and extent of the 33km road network, is beyond remedy, having illegally blasted, excavated and disturbed the top-soil down to bedrock level in a way that cannot ever be fully rehabilitated, and constitutes PERMANENT, CONCIOUS and INTENTIONAL damage. This, despite and notwithstanding its important indigenous cultural significance.  When the author notices the scale of transgression it can only be deduced that this was no unfortunate error in communication with a lowly road worker, which I am sure Aquila would most probably claim. This was performed on such a scale that it could simply NOT have escaped the attentions of Aquila's senior and top-management.  Firstly such activities (33km of road construction including heavy earth moving equipment and EXPLOSIVES) would have required a clearly budgeted, internal control process, or would Aquila have the South Afri	25/03/2014	Your concerns are acknowledged and form part of th Section 24G EIR that will be submitted to LEDET.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
24/03/2014 E-mail	General Manager of Meletse Game Reserve	Fred Stow	It is not without mirth that the author reads the Aquila websites Employee Code of Conduct whereby it loftily claims its adherence to the following:  Code of conduct  All employees and Directors are required at all times to act in accordance with the Consolidated Entity's Code of Conduct, which prescribes standards of behaviour to be maintained in relation to inter alia:  compliance with laws and regulations; environmental responsibilities; Is such ostensibly laudable conduct confined purely to the boundaries of the Australian judiciary or is their employees' behaviour in so-called third world countries somehow conveniently exempt from such righteous governance?  To provide this legislative back door, through the Section 24G process, to such a conscious,	25/03/2014	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
			intentional and blatant transgression, is to allow any overseas investor with deep enough pockets free reign to hold South Africa's environmental and all other legislation to ransom and to ridicule. This country's legislative framework was constituted for good reason, to protect South Africans from abuse, be it internal or external.		
Registration and response form	Kransberg Eco Enterprises ZA (Pty) Ltd; Anget Trust	Enterprises ZA (Pty)	south of the Kransberg mountain. We have a direct view of the top of Meletsi mountain.  Kransberg Eco Enterprises ZA has developed the first internationally certified green estate in the country, which is called 360 Degrees Kransberg Highlands. It consists of 11 full title stands with a combined worth of approximately R15 million.  Anget Trust owns Portion 25 of the Farm Groothoek which has tourism rights as well as developing rights for 15 residential units. The mining of Meletsi will have a huge detrimental impa		The purpose of this Section 24G EIR is to describe and assess the impacts associated with the previously constructed road network (in support of a rectification application to LEDET).  The impacts associated with the activities relating to the proposed mining operation will be included in the Scoping Report and EIR (application for environmental
			on these existing land use rights.		authorisation for proposed activities associated with the project).  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
			We question the applicant's ability to protect Gatkop Cave and to ensure that the bats will continue to use it as a roosting place. We are concerned about the short eared trident bat which is critically endangered.		A study on bats was conducted for the project (also including the impacts associated with the construction of the prospecting roads), as contained in Section 4.2, dealing specific with impacts relating to the unlawful road construction. Refer to the resultant specialist report in Appendix F5.
			What do you intend doing with the red data plant species found on the mountain?		The management and mitigation measures are included in Section 4.2 of this Section 24G EIR. Note that this deals specifically with the impacts arising from the unlawful road construction.
			Wind date from up at Marakele Towers was used as being the most relevant in order to indicate the prevalent wind directions, speed, etc. with the aim of highlighting the area's most likely to be affected by dust pollution. We have to question the relevance of this data. We know from experience that there exists a micro climate on the southern slopes of the Kransberg that leads to regular gale force berg wind conditions blowing down the mountain, especially at night. These do not reflect on the data that were gathered up at the Towers. Surely those berg winds will reach the top of Meletsi, which is less than 10kms away. If it does, dust pollution will be unavoidable.		This comment has been referred to the Air Quality specialists, and below is the response:  "In the Air Quality specialist study, we did not use the Marakele meteorological data referred to in the comment. So-called MM5 data, which is modelled meteorological data for the actual site, was used. This is because measured data for the site was not available. MM5 takes topography into account, and therefore includes the berg wind conditions (katabatic winds) referred to in the comment.  Interestingly, predominant winds are indicated as flowing away from Marakele, in other words south from the



				Kransberg over Meletse, so that the main impact of the bergwind will be found not in Marakele but south of the Meletse site."
Kransberg Eco Enterprises ZA (Pty) Ltd; Anget Trust	Johan van Rooy	The visual impact of the proposed mining is being played down. Arguments that the locals will be those that would be affected the most, but that they will soon become use to it should never be entertained. Tourists will, according to the document, be "majorly affected". This while the surrounding land use consists mostly of eco tourism in the form of wildlife conservation (incl. Marakele NP), wildlife breeding, lodges, eco estates and hunting. The document refers to the proximity to Marakele NP on a few occasions, but not once does it highlight the impact that the open cast mining on top of Meletse would have on visitors to the park, especially those going up to the Towers. We are aware of draft legislation being proposed for protecting the boundaries of national parks, including potential visual disturbances. Mining on top of Meletsi would be severe visual disturbance.		Visual impacts associated with the construction of the prospecting roads are described in Section 4.2. Furthermore, the Visual Impact Assessment report is attached as Appendix F9.  Please further note that the impacts as discussed refer specifically to the unlawful road construction and not to mining operations.
		The EIA document states that the affected properties are not part of the Waterberg Bioshere Reserve, but it makes no reference to the proposed expansion of the Biosphere's borders, or to the fact that the mining activity will take place within a Zone 2 area i.t.o the Waterberg Environmental Management Framework.  The road infra-structure is not suitable for transporting iron ore to either Thabazimbi or Alma.		This is acknowledged. A description with regards to the activities in relation to the proposed expansion of the Biosphere's borders has been included in Section 3.11 of this Section 24G EIR.  Management measures in terms of maintenance of roads are included in Section 4.2 of this Section 24G EIR. Note that this only deals with the prospecting activities.
		The existing electrical distribution network is already under strain. Eskom had planned a new substation in order to address this, but they have so far been unable to get the project started due to complications w.r.t finalizing suitable routes for the power lines.		Your comment refers to the proposed mining activities. For the purpose of the Section 24G, activities are only associated with road construction for prospecting.
Rooiberg Bewaria	E.B. Nieuwoudt	I understand from Mr Justin Truter of Werksmans that you have granted an extension of two weeks from last week to give comments on your 24G deadline of today. We are also relying on his work and would just like to know if the extension is therefore applicable to everyone or should we specifically ask. In that case, I am asking for the same extension for myself and also on behalf of Rooiberg Bewaria. I will appreciate if you can confirm the deadline if applicable.	24/03/2014	Response sent through via e-mail at the time on 24/03/2014:  It was specifically for Christine Botha as they were not notified timeously of the documents on the website. However we do want comments on the documents and will grant you extension until the 1st of April 2014 as we have not received any comments to date.
	H. Braack	Can you please tell me who the specialists are who are conducting specialist studies, and the scope and duration (time spent) of these studies?  Thank you for your assistance.	08/05/2014	Specialists CV's were provided to the IAP. Specialist reports are attached to this Section 24G EIR as Appendix D.
	Enterprises ZA (Pty) Ltd; Anget Trust	Enterprises ZA (Pty) Ltd; Anget Trust  Rooiberg Bewaria E.B. Nieuwoudt	Enterprises ZA (Pty) Ltd; Anget Trust  those that would be affected the most, but that they will soon become use to it should never be entertained. Tourists will, according to the document, be "majorly affected". This while the surrounding land use consists mostly of eco tourism in the form of wildlife conservation (incl. Marakele NP), wildlife breeding, lodges, eco estates and hunting. The document refers to the proximity to Marakele NP on a few occasions, but not once does it highlight the impact that the open cast mining on top of Meletse would how on visitors to the park, especially those going up to the Towers. We are aware of draft legislation being proposed for protecting the boundaries of national parks, including potential visual disturbances. Mining on top of Meletsi would be severe visual disturbance.  The EIA document states that the affected properties are not part of the Waterberg Bioshere Reserve, but it makes no reference to the proposed expansion of the Biosphere's borders, or to the fact that the mining activity will take place within a Zone 2 area i.t. of the Waterberg Environmental Management Framework.  The road infra-structure is not suitable for transporting iron ore to either Thabazimbi or Alma.  The existing electrical distribution network is already under strain. Eskom had planned a new substation in order to address this, but they have so far been unable to get the project started due to complications w.r.t finalizing suitable routes for the power lines.  Rooiberg Bewaria  E.B. Nieuwoudt  I understand from Mr Justin Truter of Werksmans that you have granted an extension of two weeks from last week to give comments on your 24G deadline of today. We are also relying on his work and would just like to know if the extension is therefore applicable to everyone or should we specifically ask. In that case, I am asking for the same extension for myself and also on behalf of Rooiberg Bewaria. I will appreciate if you can confirm the deadline if applicable.	Enterprises ZA (Pty) Ltd; Anget Trust  those that would be affected the most, but that they will soon become use to it should never be entertained. Tourists will, according to the document, be "majorly affected". This while the surrounding land use consists mostly of eco tourism in the form of wildlife conservation (incl. Marakele NP), wildlife breeding, lodges, eco estates and hunting. The document refers to the proximity to Marakele NP) on a few occasions, but not once does it highligh the impact that the open cast mining on top of Meletse would have on visitors to the park, especially those going up to the Towers. We are aware of draft legislation being proposed for protecting the boundaries of national parks, including potential visual disturbances. Mining on top of Meletsi would be severe visual disturbance.  The Eth document states that the affected properties are not part of the Waterberg Bioshere Reserve, but it makes no reference to the proposed expansion of the Biosphere's borders, or to the fact that the mining activity will take place within a Zone 2 area i.t. othe Waterberg Environmental Management Framework.  The road infra-structure is not suitable for transporting iron ore to either Thabazimbi or Alma.  The existing electrical distribution network is already under strain. Eskom had planned a new substation in order to address this, but they have so far been unable to get the project started due to complications w.r.t finalizing suitable routes for the power lines.  Rooiberg Bewaria  E.B. Nieuwoudt  Lunderstand from Mr Justin Truter of Werksmans that you have granted an extension of two weeks from last week to give comments on your 24cd deadline of today. We are also relying on his work and would just like to know if the extension is therefore applicable to everyone or should we specifically ask. In that case, I am asking for the same extension for myself and also on behalf of Rooiberg Bewaria. I will appreciate if you can confirm the deadline if applicable.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
07/05/2014	Rooiberg Bewaria	E.B. Nieuwoudt	Thank you for the report.  I am sorry that I did not pick it up earlier, but in your Progress Report it is just highlighted. When can we expect to get the final Specialist Studies, because it is really difficult to comment on information that is provided on a piece-meal basis. How will you then treat the Interested and Affected Parties with regard to consolidated input for example.  Although you gave an extension on the period for comments on 23 April 2014, technically you give a 4 working day extension from 2 May 2014 to 9 May 2014. Do we now treat it as 10 working days to 19 May 2014 or do you effectively extent by 4 working days?  I hope to hear from you soon.	08/05/2014	Response as per e-mail at the time on 08/05/2014:  "All the specialist studies are finalised except for the following studies:  Social impact study,  Vulture study,  Paleontological study,  Anthropological study.  All the other final specialist studies were included as part of the MPRDA EMPr. The Interested and Affected Parties will have opportunity to comment on all studies as part of the project phases as explained in the progress report. For example on the MPRDA EMPr the comment period was from the 27th March to the 2nd May 2014. This was extended to the 9th of May 2014 due to some of the annexures not being accessible on the Shangoni website".  This Section 24G EIR has been submitted to LEDET, and has also been made available to IAP's for review. Subsequently, comments will be addressed and / or responded to in the final Section 24G EIR, followed by submission of the report to LEDET. All specialist studies are made available as part of this review process.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	<ul> <li>1 We act for Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf"), represented by Mr Cosmos Cavaleros, and the Rooiberg Bewaria ("our clients").</li> <li>2 Calshelf are the owners of land adjacent to an area on which an Australian listed mining company, Aquila Steel (South Africa) Pty Ltd ("Aquila") has undertaken various unlawful</li> </ul>		Refer to responses below.  Refer to responses below.
			activities that have resulted in significant environmental degradation. Calshelf utilises its land as a private game reserve, as do many of the surrounding land owners.  3 The Rooiberg Bewaria is a Public Benefit Association with 35 members. The aims and purposes of the Rooiberg Bewaria, captured in its Constitution, include:  • "To promote the environmental protection of the area for the benefit of all people interested in the environmental protection of the bushveld area in the districts of Rooiberg in the district of Thabazimbi;  • To promote eco-tourism and the protection of fauna and flora; and  • To promote social stability."		Refer to responses below.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	<ul> <li>4 The members of Rooiberg Bewaria own land in the Rooiberg area in excess of 50 000 hectares.</li> <li>5 Our clients have submitted separate letters commenting on the section 24G NEMA report and we ask that these letters be read together with this letter of objection.</li> <li>6 Our clients, their members and employees all have a direct interest in the environmental and ecological integrity of the Meletse Mountain and its surrounding area and the quality of the ground and surface water resources in the area and in certain instances are dependent on these resources for their livelihood and health. Our clients are directly affected by any environmental or ecological degradation or contamination of the water resources or by any visual scarring of the mountain slopes.</li> <li>7 Our clients are of the view that the application for the <i>ex post facto</i> rectification of unlawful commencement with certain activities identified under the National Environmental Management Act, 1998 ("NEMA"), which has resulted in environmental degradation as significant as that caused by Aquila, should never be condoned or countenanced. This is all</li> </ul>		Refer to responses below.  Noted. The separate letters as received from the IAPs are included in this table.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		the lead 8 Co income to make shis is here em 9 Ou un Aq De aff un	the more so considering Aquila carried out the activities wilfully and in flagrant disregard of at least five of our country's statutes, including NEMA.  8 Considering the nature and extent of the unlawful road construction and related activities including blasting and the removal of protected tree species and vegetation, and having regard to the sensitivity of the receiving and surrounding environment generally, coupled with the materially adverse effects that our clients have already suffered and will continue to suffer should the application by Aquila be granted with the result that the damage to the environment is not rehabilitated, our clients have a clear and direct interest in the application. Our clients act herein in their own interest, in the interest of their members (where relevant) and their employees as well as in the interest of the environment and in the public interest.  9 Our clients are all interested and affected parties in relation to the application for rectification under section 24G of NEMA to which this objection letter relates and have also objected to Aquila's application for a mining right under the Mineral and Petroleum Resources  Development Act, 2002 ("MRPDA"). Our clients have also registered as interested and affected parties ("I & AP's") in relation to Aquila's application for environmental authorisation under section 24 of NEMA in respect of their mining activities, which has reached the draft scoping phase but has been placed on hold pending the outcome of the section 24G rectification application.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  The environmental authorisation application under NEMA, 1998 has not been placed on hold. The draft scoping report is currently being completed for submission to LEDET.  Activities associated with the construction of the roads for prospecting are excluded from the application for environmental authorisation.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	10 At the outset we also note with concern that a number of interested and affected parties and communities have not been adequately consulted, if at all, as required in terms of the public participation requirements under NEMA and the MPRDA. These parties include various community members, including but not limited to labour tenants, occupiers, spiritual and religious leaders and Sangomas for whom the Meletse Mountain is of paramount spiritual and ancestral significance. This lack of consultation which is fatal to the application for section 24G NEMA approval will be dealt with in further detail below.		Applicant Response:  "An attempt to consult with religious leaders took place. The applicant organised a meeting to consult with the local community Sangomas and spiritual leaders as far back as 15 October 2012. The meeting request was accepted by Ms Yvonne Kgotlang, a local Sangoma, and as the local user she was organising the other users to attend. On the day they decided not to attend."  The traditional healers are included in the project's IAP database and are consulted as part of the current public participation process (refer to Table 47: Meletse Mountain Religious Interest of the IAP database).  Furthermore, an Anthropologist was appointed on the 17th of March 2014, who consulted directly with the traditional healers namely Yvonne Kgotholong in



			<ul> <li>The structure of this objection letter is as follows:</li> <li>background to the section 24G NEMA application;</li> <li>a description of the extent of the environmental degradation caused by Aquila and its impact on the receiving and surrounding environment and on our client's, and other I &amp; AP's rights and interests;</li> <li>a discussion of the relevant legal framework and the flaws in the section 24G NEMA application;</li> <li>the lack of objectivity displayed by the environmental assessment practitioner ("EAP") and the sanctions that should be imposed;</li> <li>a summary of the appropriate remedies in the light of Aquila's conduct; and conclusion.</li> <li>Background to the section 24G NEMA application:</li> <li>Aquila was granted separate prospecting rights for the properties Randstephne 455KQ on 18 July 2007 and remaining extent Donkerpoort 448KQ on 22 October 2008 respectively.</li> <li>These prospecting rights permitted the construction of 1.6km – 3km of road in order to access ten drilling sites.</li> </ul>	Tw of traithe atter No	rticular. The specialist report is attached to this ction 24G EIR as Appendix F16.  To further community meetings were held on the 12 <sup>th</sup> June 2014 (at Rooiberg and Regorogile), and the ditional healers were notified telephonically prior ereto (as per list obtained by Anthropologist). Referendance list in Appendix E7.  Teted.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	12.3 Contrary to its prospecting rights and Prospecting Works Programme and Environmental Management Programme ("EMP") (refer to paragraph C2.15 of the EMP), and in contravention of NEMA and at least 5 other national statutes that are described below, Aquila constructed in excess of 33km of roads and cleared 200 drilling sites for the purposes of prospecting. These unlawful activities commenced in September 2007 and continued even after the section 24G NEMA application had been submitted, until as recently as January 2014.	ela wit wit wit ass cle Se act  Ge doi (re 19. 1.9 and 32. Re dis roa	e activities triggered in terms of the EIA Regulations, 10 and included in this Section 24G EIR, have been aborated upon in terms of the surface area associated the the prospecting roads. The surface area reflected thin the Section 24G EIR includes surface disturbance sociated with both road construction as well as areas eared for drilling of prospecting boreholes. Refer to action 2 in this Section 24G EIR for a description of tivities as undertaken  sographic Information System (GIS) calculations were the and in total 32.89km of roads are present on-site for to Figure 7, Figure 8 and Figure 9). This includes a superior of the section 24G total of the section as cleared for the construction of the section and borehole sites.  See also to Figure 2 of the Section 24G EIR titled: ap illustrating the gravel roads on the contravened terms.



			The unlawful clearing and road construction involved extensive bulldozing and destruction of various protected tree species which was in further violation of the Applicant's prospecting right and EMP (refer to paragraph C2.16 of the EMP), as well as in violation of NEMA and at least 5 other statutes. The unlawful road construction also involved extensive blasting and removal of topsoil, again contrary to Aquila's own prospecting rights and Prospecting Works Programme and Environmental Management Programme (refer to paragraphs C6.3 and C6.4 which prohibit blasting and C6.6.1 which prohibits the removal of topsoil).	Impacts associated with the clearing of an area for the construction of the roads and blasting activities are described in Section 4.2 of this Section 24G EIR. This Section 24G has been submitted to LEDET.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	12.5 Aquila's explanation for its breach of the relevant laws, including NEMA, through the unlawful clearing of sensitive indigenous vegetation and construction of the road is implausible to say the least. Aquila contends that it was not aware that environmental approval was also required as prospecting rights from the Department of Mineral Resources had already been obtained. The applicant contends therefore that "due to this oversight", it commenced with the construction of the gravel roads without securing environmental authorisation. The effect of this oversight is graphically illustrated in the photograph below which is extracted from Aquila's own section 24G NEMA application. This photograph reveals only a portion of the illegally constructed road. The damage to the mountainside is clearly evident. The extent of this damage and the various significant environmental impacts created thereby will be described in detail below.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
			<ul> <li>12.6 Aquila's contention that its unlawful activities were an oversight and were based on an assumption that their prospecting rights permitted such activities, conveniently ignores the fact that the construction of the road was also in flagrant contravention of the prospecting rights and its associated works programme and management plan on which Aquila seeks to rely. This contention also ignores the provisions contained in the Prospecting EMP which expressly state (in paragraph A6) that "Compliance with the provisions of the (MPRDA) and its Regulations does not necessarily guarantee that the applicant is in compliance with other Regulations and legislation. Other legislation that may be immediately applicable includes, but are (sic) not limited to: the National Environmental Management Act, 1998 and the National Water Act, 1998" (Own emphasis)</li> <li>12.7 In paragraph E of the prospecting EMP, a Mr J.L Van Deventer on behalf of Aquila declares under oath that the information furnished in the EMP is "true, complete and correct", and "undertakes to implement the measures contained in the EMP and records that he understands that the undertaking is legally binding and that failure to give effect to the undertaking will render him liable to prosecution in terms of sections 98(b) and 99(1) (g) of the MPRDA". As we have stated, Aquila has acted in flagrant violation of its prospecting rights and prospecting EMP, with significant adverse impacts on the environment and on various parties rights and interests and Mr Van Deventer (and the directors of Aquila) are, in consequence, liable for prosecution.</li> </ul>	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Applicant's response: "Aquila submitted an amended EMP in 2011 Furthermore, annual progress reports were provided to the DMR, which contain specific information regarding the activities that were being conducted as part of the prospecting activities."



11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	12.8 Aquila's contentions are also implausible considering that numerous I & AP's, including our clients, have repeatedly brought the unlawful clearing, road construction and blasting activities to both Aquila and the relevant environmental and mineral authority's attention between 2007, when the unlawful activities commenced, and January 2014, when they finally ceased.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		12.9 Considering the fact that Aquila is an Australian listed mining company operating in a foreign country it is all the more implausible that they would not have ensured that they obtained expert advice on the need for environmental authorisation (and various other statutory approvals) prior to continuing with their unlawful clearing and road construction in such a sensitive environment.	Applicant's response:  "Aquila has utilised local environmental companies to compile the documents and to assist with the Section 24G application as far back as 2006 and 2008 and where they identified issues it was acted upon."
		12.10 Aquila has had teams of specialist consultants, including lawyers, employed as advisors since the outset of the application processes and it is extremely doubtful that not one of these advisors would have raised the need or at least the possibility that prior environmental authorisation was required. Simply put Aquila's contention that its illegal clearing and road construction activities came about as a result of ignorance and oversight is untenable. The section 24G NEMA application confirms that Aquila continued with their illegal road clearing activities even after they became aware that this was illegal for want of environmental authorisation (amongst other statutory approvals). Once again, the EAP tries to explain this away in the section 24G NEMA Report on the disingenuous basis that Aquila was ignorant and had assumed that it could continue with its illegal activities as it had submitted an application for environmental authorisation and while this application was being processed.	Your concerns are acknowledged and will form part of this Section 24G EIR that will be submitted to LEDET.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	12.11 The true reason for the Aquila's unlawful conduct is that it was under pressure to conduct its prospecting activities and, in the knowledge that it may take at least six months to a year before environmental authorisation could be granted for the clearing of sensitive vegetation, removal of protected tress and construction or expansion of the road, they wilfully elected to continue unlawfully without the requisite approvals. The adage "it is easier to seek forgiveness than approval" springs to mind. Having caused extensive and significant environmental damage, in wilful contravention of NEMA, the MPRDA, the National Forests Act, 1998 ("NFA"), the National Water Act, 1998 ("NWA"), the National Environmental Management: Protected Areas Act, 2003 ("NEMPAA"), the National Environmental Management: Biodiversity Act, 2004 ("NEMBA") and the National Heritage Resources Act, 1999 ("NHRA"), and with cavalier disregard for sections 15 and 31 of the Constitution of the Republic of South Africa, 1996 ("the Constitution"), the Traditional Leadership and Governance Framework Act, 2003 ("the Traditional Leadership Act") and the Commission of the Promotion and Protection of the Rights of Cultural, Religious and Linguistic Communities Act, 2002 ("the Religion and Culture Act"), Aquila now audaciously seeks to have its unlawful activities regularised through an ex post facto application for environmental authorisation in which it presents the road as a fait accompli and its company as an innocent and ignorant party. Furthermore, Aquila has had the benefit of this unlawful road and the 200 drill sites that were unlawfully cleared during its prospecting phase and is reliant on the unlawful road as an essential component of its proposed mining activities for which a mining right application is currently pending before the mineral authority.  12.12 Such conduct should not be countenanced by either the environmental authority or the relevant mineral, water and heritage authorities who should each invoke the strictest criminal an	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the unlawful road construction activities are assessed.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.



			12.13	We hold instructions to make representations to the relevant environmental enforcement	Your concerns are acknowledged and will form part of
				directorate at the provincial environmental department and to the national Department of	this Section 24G EIR that will be submitted to LEDET.
				Water and Environmental Affairs, and also to the mineral authority calling on these	
				authorities to invoke the necessary civil and criminal sanctions against Aquila, including	
				against Aquila's directors in their personal capacities as provided for in NEMA, the NWA	
				and the MPRDA, and as was recently done in accordance with the relevant sanctions	
				under NEMA in the matter of The State v Blue Platinum Ventures (Pty) Ltd and Matome	
				Samuel Maponya,34 ("Blue Platinum Ventures"). These representations will be delivered	
				shortly and will be copied to the National Prosecuting Authority.	
11/04/2014	Werksmans Attorneys	Justin Truter	10.14	As we have stated, Aquila's activities were not only in contravention of their prospecting	Your concerns are acknowledged and form part of this
		Justin Trater	12.14		Section 24G EIR that will be submitted to LEDET.
Letter	(on behalf of Calshelf			right and therefore an offence in terms of the MPRDA, but also in contravention of the	Section 24G EIR that will be submitted to LEDET.
	Investments 172 (Pty)			duty of care towards the environment prescribed in Section 28(1) of NEMA and an	
	Ltd and Calshelf 173			offence under Section 24F and Section 49A of NEMA. Notwithstanding this, and despite	Refer to Section 4.2 of this Section 24G EIR where
	(Pty) Ltd ("Calshelf")			the various complaints lodged by our clients with the relevant authorities over the years,	environmental impacts associated with the unlawful road
				we are not aware of one directive or compliance notice being issued under any of the	construction activities are assessed.
				laws which Aquila has contravened. The illegal clearing and construction activities	
				required, inter alia, prior environmental authorisation under NEMA which was not	Mitigation and management measures are also included
				obtained by Aquila. In the circumstances, Aquila has now applied for the rectification of	in Section 4.2 of this Section 24G EIR as well as the draft
				their unlawful commencement with listed activities in accordance with section 24G of	EMP (Appendix G).
				NEMA, admitting that their activities were unlawful and seeking ex post facto	
				environmental authorisation.	
			12.15	Aquila has appointed Shangoni Management Services (Pty) Ltd as its (purportedly)	Regulation 17 of the Environmental Impact Assessment
				independent EAP. We will show in this objection letter that Shangoni has failed to conduct	Regulations (EIA Regulations) states that an appointed
				the section 24G NEMA application process in accordance with the requirements of	EAP must, at all times, be independent and objective in
				NEMA, read with the NEMA Environmental Impact Assessment ("EIA") Regulations35	facilitating/managing an application for an environmental
				and have failed to meet the statutory requirements in respect of independence as	authorization, even if this results in views and findings
				prescribed in regulation 17 of the NEMA EIA Regulations.	that are not favourable to the applicant.
				prescribed in regulation 17 of the NEINA ETA Hegulations.	that are not ravourable to the applicant.
					Independence is defined in the EIA Regulations as
					· ·
					meaning "that the EAP (in this instance, Shangoni) has
					no business, financial, personal or other interest in the
					activity, application or appeal in respect of which that
					EAP is appointed in terms of these Regulations other
					than fair remuneration for work performed in connection
					with that activity, application or appeal; or that there are
					no circumstances that may compromise the objectivity of
					that EAP or person in performing such work.
					In Shangoni's initial project proposal for this particular
					project, it is stated that payment for the work done by
					Shangoni is not subject to a positive outcome of the
					application. Thus, Shangoni has no business, financial,
					personal or other interest in this activity other than the
					fair remuneration for the work performed in connection
					with this activity. Shangoni complies with the
					independence-requirement set out in regulation 17.



 $<sup>^{\</sup>rm 34}$  Case nr: RN 126/13, in the Magistrate Court for the Regional Division of Limpopo.

<sup>&</sup>lt;sup>35</sup> Published in GN R543 of 18 June 2010.

11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Refer above.	Because of the fact that Shangoni has no interest in this activity other than the fair remuneration for the work done by it and the fact that payment for the work done by Shangoni is not subject to a positive outcome of the application, no circumstances exist that may compromise the objectivity of the EAP (as required per the definition of "independence" set out above).
			Furthermore, there is no legal restriction on work simultaneously conducted, by the EAP, on different projects for one applicant. Therefore Shangoni may manage numerous applications simultaneously for one client, as is being done for Aquila Steel. This, in no way, taints Shangoni's independence and objectivity. Of further note, is the due attention and consideration placed to consider the inputs from IAP's within this Section 24G EIR.
			Based on the facts stated above, Shangoni did indeed act independently and objectively at all times in this process and therefore complies with all the requirements set out in regulation 17 of the EIA Regulations. The fact that Shangoni is managing numerous applications simultaneously for Aquila Steel does not establish any material conflict, nor does it taint its independence in this process.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	12.16 Shangoni is also responsible for Aquila's mining right application under section 22 of the MPRDA and this, we submit, presents a material conflict which has already tainted Shangoni's independence. We have, in our client's objection to the mining right application, pointed out numerous instances where Shangoni has misrepresented the true fact which reveals a clear lack of independence.	Shangoni as the independent EAP has objectively represented all the available information and portrayed the extent and severity of the actual and potential impacts on the environment. The technical report furthermore clearly indicates which impacts will remain of high significance and which impacts can be mitigated. Information from the specialist reports were used to derive the conclusions. The technical report meets the requirements as specified in regulation 17 of the NEMA EIA regulations of 2010.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	12.17 Shangoni has also submitted an application on behalf of Aquila for environmental authorisation under section 24 of NEMA to carry out their mining activities and for a waste management licence in terms of the National Environment Management Waste Act, 2008 ("NEMWA"). This application had reached the draft scoping phase but is on hold pending the outcome of the section 24G NEMA rectification application.	The waste management application under NEMA, 1998 has not been placed on hold. Consultation with the Authority is currently in process, since legislative changes have occurred in late 2013 (i.e. the promulgation of Government Notice (GN) 921, November 2013). The way forward will be communicated to IAP's as part of the waste management license application process, once confirmation is received from the Department.
		12.18 Shangoni has also applied on behalf of Aquila for an Integrated Water Use Licence ("IWULA") in terms of section 21 of the NWA.	The Integrated Water and Waste Management Plan (IWWMP) in support of an application for a Water Use License, is in the process of being completed.
			As per previous discussions, there is no legal restriction on work simultaneously conducted, by the EAP, on different projects for one applicant. Therefore Shangoni may manage numerous applications simultaneously for one client, as is being done for Aquila Steel. This, in no way, taints Shangoni's independence and objectivity.



			2.19 This objection letter relates to the application for rectification under section 24G of NEMA. As we have stated our clients have already objected to the grant of the mining right under the MPRDA and are also registered I&AP's in respect of the NEMA, NEMWA and NWA applications which are still in process.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
			On 18 March 2014, our clients ascertained that the Section 24G application documentation had been made available for comment. Neither our clients, nor our firm, received formal notification of this from the EAP despite all being registered as interested and affected parties. On the same day, our Ms C Botha contacted the EAP in order to ascertain when the closing date for comments was and was informed that the commenting period was from 11th to the 24th of March 2014. A request for extension was submitted to the EAP requesting more time to consider the application in light of our clients, and our firm's late notification of the availability of documentation on 18 March 2014. By email to Werksmans Attorneys, the EAP confirmed that comments were to be submitted by 1 April 2014. After further discussion with the EAP, it was agreed that comments were to be submitted by 11 April 2014. Copies of correspondence confirming the above is attached as Annex "A" hereto.	In response to Shangoni Management Services' request for comment on 11 March 2014, feedback was provided on the Section 24G EIR on March 2014 by Umhlaba Environmental Consulting CC. Shangoni also confirms that Umhlaba Environmental Consulting CC, Mr. Cosmos Cavaleros and the Rooiberg Bewaria were notified on 11 March 2014 (refer to Appendix E3), and it is incorrectly stated in the Werksmans' letter read as "On 18 March 2014, our clients ascertained that the Section 24G application documentation has been made available for comment".  Including Werksmans into the IAP notification list was an oversight caused by the already existing representation of Umhlaba Environmental Consulting CC. This was however corrected, and Werksmans Attorneys were allowed a comments period as extended to 11 April 2014. In addition to this extension period, Shangoni provides a further commenting period of 40 days on this Section 24G EIR (and specialist studies), that will allow further comment period prior to finalisation of the Section 24G EIR.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter 12	2.21 On 27 March 2014, our clients submitted an objection to the mining right application to the Regional Manager of the Department of Mineral Resources, Limpopo. Proof of submission is attached as Annex "B" hereto.	Please note that your concerns appear to relate to the Meletse Iron Ore Project. The purpose of this Section 24G EIR is to describe and assess the impacts associated with the previously constructed road network (in support of a rectification application to LEDET). The impacts associated with the proposed activities will be included in the Scoping Report and EIR (application for environmental authorisation for proposed activities associated with the project.
		12	On 8 April 2014 we were notified by the EAP that the final Visual Impact Assessment ("VIA") that forms an integral part of the section 24G NEMA application had been uploaded to their website. This 89 page document required scrutiny before we could finalise this objection letter. We submit that the 3 days afforded us to do so is hopelessly inadequate. Fortunately, we had obtained an extension which enables us to at least have some, albeit inadequate, regard to the VIA in formulating our comments. It does not appear that other I&AP's have been afforded this opportunity. This is, once again, a failure to comply with the peremptory public participation requirements prescribed under NEMA – I&AP's must be afforded a fair and reasonable opportunity to consider and comment on the final section 24G NEMA report and any specialist reports submitted as part of this report to the environmental authority. This opportunity has not been afforded to the I&APs and they are prejudiced as a result in that information is placed before the environmental authority on which they have not had a fair and reasonable opportunity to comment.	Werksmans were granted extensions, when such requests for extensions were submitted. Further to this, IAPs are provided with another 40 day comment period on this Section 24G EIR, and associated specialist reports. Additional Note: Another 30 day reviewing period is provided on Final Section 24G EIR.



		12.23 At this point we pause to record that there are a number of other material specialist reports that are still in the process of being undertaken and that have not yet been made available for public comment. These reports are material to a determination under section 24G of NEMA and the section 24G Report must be amended to include the findings of these reports once these reports become available and the amended 24G Report and specialist reports must be re-circulated for public consideration and comment before being re-submitted to the environmental authority for consideration. The report is incomplete in its current form.  13 A description of the extent of the environmental degradation caused by Aquila and its	All specialist reports are attached to this Section 24G EIR (refer to Appendix F). Specialist study conclusions and impact assessments are also incorporated into this Section 24G EIR.  Information presented in Section 4.2 of this Section 24G
		impacts on the receiving and surrounding environment and on our client's and I & AP's rights and interests:  13.1 The Technical Report prepared in respect of the application under section 24G of NEMA records various significant ecological impacts, certain of which are considered by the applicant's own environmental consultant to be irremediable.  13.2 These include habitat destruction and impacts on various endangered, red data species of flora and fauna. The report also reveals various contraventions of the NWA and significant risks of water contamination as well as contraventions of the NFA and the NEMBA in that the applicant has bulldozed various protected tree species that are described in the applicant's Technical Report, until as recently as January 2014.	EIR provides a description of the ecological impacts.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	As we have already stated, the bulldozing and destruction of various protected tree species is further in violation of the applicant's Prospecting right and EMP which permitted only 1.6km-3km of roads to be constructed (refer to paragraph C2.15 of the EMP) with no blasting (refer to paragraph C6.3 and C6.4) or removal of trees (C2.16) or topsoil (C6.6.1).	Information presented in Section 4.2 of this Section 24G EIR provides a description of the ecological impacts.
		<ul> <li>13.4 Furthermore the applicant has conducted itself in breach of at least five other relevant statutes:</li> <li>13.4.1 In terms of NEMA, the applicant is in breach of the duty of care towards the environment as prescribed under section 28(1) and in addition to this also required an environmental authorisation in relation to the clearing of indigenous vegetation in a sensitive area and the construction of the roads which it failed to procure.</li> <li>13.4.2 Under the NWA, the construction of the gravel roads across various natural drainage lines within the valley is illegal. This activity is listed under Section 21 (c) which lists <i>impeding or diverting the flow of water in a watercourse and (i) altering the bed, banks, course or characteristics of a watercourse</i> as uses that require a water use license, which the applicant has not secured. This is acknowledged and conceded in the applicant's own Technical Report submitted with its section 24G NEMA application.</li> <li>13.4.3 In terms of the NFA and NEMBA it is a criminal offence to remove certain listed tree species without a permit. The applicant's unlawful road construction involved the bulldozing of various protected and indigenous tree species without any permit.</li> <li>13.4.4 The applicant has continued with the unlawful removal of protected tree species as recently as January 2014 when it removed and destroyed a number of protected Leadwood trees. At a Public Meeting on 1 February 2014 in Thabazimbi, one of the I&amp;AP's recorded the fact that, in the process of constructing unlawful roads along the fence, in close proximity to the Gatkop caves, the applicant had uprooted and destroyed approximately 10-20 protected Leadwood trees. He recorded further that this was done in the two weeks before the meeting i.e. the second half of January 2014.</li> <li>13.4.5 The applicant's unlawful activities in the buffer zone of a biosphere reserve and in the buffer zone of the Marakele National Park are also in contravention of NEMBA and NEMPAA and the Depar</li></ul>	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Section 2.2 provides information on the water use activities (under Section 21(c)) associated with the construction of the prospecting roads.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the unlawful road construction activities are assessed.  Discussions pertaining to the site location and associated sensitivity is provided in Section 3.11 (Protected areas and conservation planning), with further reference to the location with respect to Marakele National Park as depicted in Figure 3.



		<ul> <li>13.4.6 A map showing the buffer zone around the Marakele National Park and the location of the property in this buffer zone is attached marked Annex "C".</li> <li>13.4.7 These consents have not been obtained and the unlawful clearing of indigenous vegetation and the construction of the road and associated activities such as blasting has also had a significant impact on the sense of place and various important spiritual, religious and heritage resources.</li> <li>13.4.8 The applicant's section 24G Technical Report confirms these contraventions. The applicant is therefore in breach of at least five other relevant statutes.</li> </ul>	
Letter (on behalf Investmer Ltd and C	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	On this basis it is submitted that the applicant is approaching the authority with unclean hands and has demonstrated a flagrant disregard for our country's rule of law. In these circumstances we reiterate the authority should not assist the applicant in condoning its illegal activities or approving the continuation of its unlawful activities. Instead, the environmental authority and other relevant authorities should send out a clear message that such flagrant violation of our country's laws will not be countenanced and tolerated and should invoke the harshest criminal and civil sanctions against Aquila and its directors in their personal capacities.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Applicant's response: "Aquila submitted a Section 24G application as far back as 2008"  A timeline of the rectification process, including when the original application was submitted to the LEDET is provided within the Section 24G EIR.
		13.6 Ecological impacts:  13.6.1 The negative ecological impacts are confirmed in the Technical Report submitted with the applicant's section 24G NEMA application which confirms that significant pollution, ecological degradation and damage to the environment have already been caused by the unlawful construction of the road and associated activities. These impacts will be exponentially exacerbated by the proposed mining activities. The sensitivity of the receiving and surrounding environment and the nature and significance of the impacts is confirmed in the Technical Report submitted with the applicant's section 24G NEMA application. These impacts include:  Irremediable disturbance of fauna and flora species;  Irremediable disturbance of sensitive landscapes;  Visual impacts and scarring;  Soil erosion;  Traffic impacts;  Siltation and potential contamination of watercourses;  Risk of hydrocarbon spillages;  Dust generation and air emissions;  Noise generation; and  Establishment of invader plants.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the unlawful road construction activities are assessed.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	13.6.1.1 Irremediable disturbance of sensitive ecosystems including endangered and threatened fauna and flora species:  13.6.1.1.1 The Technical Report noted that: International attempts to conserve biodiversity have seen a shift towards focussing on ecosystems and landscapes (habitats) rather than efforts in conserving specific species. This is the case due to the variety of living organisms, which make up ecosystems relying on suitable habitats to which they have become adapted over long periods of time. Habitat degradation is one of the main reasons for species becoming extinct in a particular area. However, threatened species are seen as indicators of the overall health of an ecosystem and serve, with varying degrees of success, as 'umbrellas' for the protection of other organisms as well as ecosystems (Hilton-Taylor, 1996; 2000).  13.6.1.1.2 The property is situated a mere 8km from the Marakele National Park, to the north. The National Park also forms the core of the Waterberg Biosphere Reserve, a special type of reserve which promotes solutions to reconcile the conservation of biodiversity with its sustainable use. Biosphere reserves are internationally recognised and protected by the United Nations Educational Scientific and Cultural	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.  Specialist reports are also attached to this Section 24G EIR.



		Organization ("UNESCO"). In addition to the above, several private nature reserves and game lodges are found in the immediate vicinity of the project site.	
		13.6.1.1.3 The applicant's Technical Report, submitted with the application for rectification under section 24G of NEMA confirms that a number of red-data listed flora and fauna species have been affected by the applicant's unlawful road construction (although no reference is made to the impacts of blasting during that process and the obvious and very significant impact this would have had on fauna and flora) and it is clear that these impacts will be all the more significant during the construction and operational phases of the proposed mine. The Technical Report confirms that animal life in the area where gravel roads have been established has been negatively affected by increased activities in the area including habitat destruction and fragmentation.	Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed. The significance of impacts on fauna and flora as per the various specialist assessments is expressed within the various tables. Effects of blasting are also included in the environmental impact assessment section.
		The unlawful road has already resulted in significant habitat loss resulting in disturbance of the fauna environment which has the potential to impact on biodiversity and habitat characteristics. This will be exacerbated by the proposed mining activities. The report confirmed that this habitat loss includes:  • Change in plant pollinator composition;  • Fragmentation to habitat;  • Loss of animal corridors;  • Loss of habitat; and  • Disturbance to animal life.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.  Specialist reports are also attached to this Section 24G EIR, as can be found in Annexure F.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	13.6.3 The farms Donkerpoort 448KQ and Randstephne 455KQ correspond to the Savanna Biome and more particularly to the Central Bushveld Bioregion as defined by Mucina & Rutherford (2006). The site incorporates three ecological types known as the (1) Waterberg Mountain Bushveld, (2) Central Sandy Bushveld and (3) Western Sandy Bushveld (Mucina & Rutherford, 2006). Central Sandy Bushveld is listed in the National Threatened Species List under NEMBA with a conservation status of "vulnerable" with less than 3% conserved in a number of scattered reserves. No further loss of this vulnerable vegetation type should be permitted.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.  Specialist reports are also attached to this Section 24G
		13.6.4 The property and surrounding areas contain numerous endangered or rare species, including the following International Union for Conservation of Nature and Natural Resources ("IUCN") Red Data and Orange listed species:  • RED: Cyphostemma hardyi and Cheilanthes deltoidea subsp. silicicola both of which are listed as "vulnerable" in status.  • ORANGE: Freylinia tropica which is listed as "rare".	EIR.
		13.6.5 The property and its surrounding areas consist of a number of habitat types with high ecological value. According to the applicant's section 24G NEMA report, the areas of avifaunal importance include the following:  13.6.6 The Sand River tributary provides ideal habitat for the "near-threatened" Half-collared Kingfisher ( <i>Alcedo semitorquata</i> ) and is a critically important daily flight/dispersal route for water bird taxa. The Sand River tributary forms a vital corridor with other foraging habitat (impoundments) and roosting sites in a region where surface water is naturally scarce.  13.6.6.1 The <i>Loudetia flavida – Monocymbium ceresiiforme</i> crest grassland and <i>Protea</i> savanna sustain a relict grassland community with affinities to the Drakensberg Highlands. In addition, the presence of <i>P. roupelliae</i> highlights the possibility for the occurrence of an isolated population of Gurney's Sugarbirds ( <i>Promerops gurneyi</i> ) –	



		13.6.6.2 The <i>Mimusops zeyheri – Calodendron capense</i> Afromontane forest and tall woodland along the various drainage lines support a bird composition of local	
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	woodland along the various drainage lines support a bird composition of local interest that is commonly associated with forested habitat types.  13.6.6.3 The ridges and vertical cliffs (part of the Loudetia flavida – Monocymbium ceresiiforme crest grassland) are the ideal nesting platform for Falconiiform taxa and foraging habitat for charismatic birds of prey species (Verreaux's Eagle Aquila verreauxii).  13.6.6.4 The large dead trees pertaining to the Acacia erioloba – Panicum maximum woodland provide roosting and breeding habitat for cavity nesters including the Redbilled Oxpecker (Buphagus erythrorhynchus) and the presence of free-roaming game is responsible for the establishment of a local population of "near-threatened" Red-billed Oxpeckers (Buphagus erythrorhynchus).  13.7 The Ecological evaluation included in the section 24G NEMA report records that the conservation importance of this community is exceptionally high. It sustains a faunal community with strong Afrotropical highland (Drakensberg) affinities that is either directly dependant on the occurrence of the Protea stands (e.g. Malachite Sunbird Nectarinia famosa) or indirectly confined to the grassland structure and altitude of the area (e.g. Buff-streaked Chat Oenanthe bifasciata). FSOCIO	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.  Specialist reports are also attached to this Section 24G EIR.
		13.7.1 The property and its surrounding areas supports one of a few populations of the range-restricted and threatened ("vulnerable") fern, <i>Cheilanthes deltoidea</i> subsp. <i>silicicola</i> . The Ecological evaluation report confirmed that a large section of this community was fragmented by the applicant's unlawful road network.  13.7.2 The vegetation assessment also identified three tree species ( <i>Acacia erioloba</i> (Mimosaceae) – Camel Thorn, <i>Combretum imberbe</i> (Combretaceae) – Leadwood, <i>Sclerocarya birrea</i> subsp. <i>caffra</i> (Anacardiaceae) – Marula, that are protected species in terms of the National Forests Act, 1998 that occur widely throughout the contravened site. These trees were destroyed by the applicant in the course of blasting, bulldozing and constructing the unlawful road without the necessary permits under the NFA and NEMBA.	
		The applicant's section 24G NEMA report acknowledges that this was done unlawfully in the absence of the necessary permit issued under NFAt to remove or disturb a protected plant. As a further clear indication of the applicant's flagrant disregard for the rule of law in South Africa, the applicant continued with the removal of more than 10 protected Leadwood trees as recently as January 2014, while its section 24G NEMA application was pending. The proposed mining activities as contemplated by the applicant will also necessitate further removal of these threatened tree species.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.  Specialist reports are also attached to this Section 24G EIR.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	<ul> <li>13.7.4 Furthermore, the applicant's illegal road construction has given rise to, and will continue to result in invaders and weed species. These species invade natural or semi-natural habitats; especially areas disturbed by humans, and are commonly known as environmental weeds.</li> <li>13.7.5 Declared weeds and invaders have the tendency to dominate or replace the canopy or herbaceous layer of natural ecosystems, thereby transforming the structure, composition and function of natural ecosystems.</li> <li>13.7.6 According to the applicant's section 24G report, the unlawful road construction and the associated clearance of vegetation communities has already resulted in alteration of the dynamics of fauna assemblage and resulted in a loss of habitat or fragmentation of habitat from similar areas. This is an impact that will be significantly exacerbated by the proposed mining activities.</li> </ul>	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.  Specialist reports are also attached to this Section 24G EIR.



	<ul> <li>Furthermore, the Waterberg mountain range provides habitat for several reptile species found almost exclusively on the mountain e.g. Waterberg crag lizard (<i>Smaug breyen</i>), Waterberg Dwarf Gecko (<i>Lygodactylus waterbergensis</i>) and Waterberg quill-snouted snake (<i>Xenocalamus bicolor australis</i>) (Branch 1998). (Source: Report titled "Aquila Steel Herpetofauna Survey; compiled by Luke Verburgt, dated July 2012" which is in appendix to the Ecological Evaluation report (Appendix F1) to the applicant's section 24G NEMA application.</li> <li>A number of Red Data listed mammals and other species are also found on the property and its surrounding areas and these animals have already been impacted negatively by the unlawful road construction.</li> </ul>	
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11/04/2014 Letter		(on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173	Justin Truter	13.7.9 The Section 24G Report records that the following "critically endangered", "endangered", "vulnerable" and "near threatened" (in terms of the National List of Threatened Species published under NEMBA and IUCN Red Data List) vertebrate mammals are located on the property and surrounding areas and have been negatively impacted as a result of the unlawful blasting and road:				Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Please note that information relating to Table 13 (as per previous draft Section 24G EIR) has been updated, based on the most up-to-date specialist information obtained from most recent site survey, refer Appendix		
			Scientific Name	Common Name	Status	7	F1.			
			Damaliscus lumatus lunatus	Tsessebe	Endangered	-	Refer to Section 4.2 of this Section 24G EIR where			
			Diceros bicornis minor	Black Rhinoceros	Vulnerable	-	environmental impacts associated with the road			
			Hippotragus equines	Roan Antelope	Vulnerable	-	construction for prospecting activities are assessed as			
			Hippotragus niger	Sable Antelope	Vulnerable	-	pertaining fauna on site.			
			Acinonyx jubatus	Cheetah	Vulnerable	-	Specialist reports are also attached to this Section 24G			
			Crocuta	Spotted Hyena	Near threatened	-	EIR.			
			Hyaena brunnea	Brown hyena	Near threatened	-				
			Leptailurus serval	Serval	Near threatened	-				
			Lycaon pictus	African wild dog	Endangered	-				
			Mellivora capensis	Honey badger	Near threatened	-				
			Cloeotis percivali	Short-eared trident bat	Critically endangered	-				
			Myotis tricolor	Tamminck's hairy bat	Near threatened	-				
			Pipistrellus rusticus	Rusty bat	Near threatened	-				
			Rhinolophus clivosus	Geoffroy's horseshoe Bat	Near threatened	-				
			Rhinolophus darlingi	Darling's horseshoe bat	Near threatened	-				
			Rhinolophus hildebrandtii	Hildebrandt's horseshoe bat	Near threatened	-				
			Atelerix frontalis	South African Hedge	Near threatened	-				
			Dasymys incomius	Water rat	Near threatened	-				
			Manis temminckii	Pangolin	Vulnerable	-				



Date and Manner of Comment	Interested and Affected Party (IAP)	and Affected	Contact Comments Person	Comments		Date of Acknowledgement of Receipt by Shangoni	Response
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	bird species are four unlawful road constr	ction 24G Report, the following vulnerand in the area and would have been a ruction (through inter alia, habitat destriction)	fected by the blasting and uction):		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Please note that information relating to Table 14 (as per
	(Fty) Liu ( Gaistieil )		Scientific Name  Gorsachius leuconotus	Common Name Whitebacked night heron	Status  Vulnerable		previous draft Section 24G EIR) has been updated, based on the most up-to-date specialist information obtained from most recent site survey, refer Appendix
			Gyps coprothercs Gyps africanus	Cape vulture  African whitebacked vulture	Vulnerable  Vulnerable		F1.
			Torgos tracheliotos  Aquila rapax	Lappetfaced vulture  Tawny eagle	Vulnerable Vulnerable		Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.
			Polemaetus bellicosus Terathopius ecaudatus	Martial eagle  Bateleur	Vulnerable Vulnerable		Specialist reports are also attached to this Section 24G
			Falco naumanni	Lesser kestrel	Vulnerable		EIR.
			ca senegalensis  Ardeotis kori	African finfoot  Kori bustard	Vulnerable Vulnerable		
			Pterocles gutturalis  Certhilauda chuana	Yellowthroated sandgrouse Shortclawed lark	Near threatened  Near threatened		
			Buphagus erthrorhynchus	Redbilled oxpecker	Near threatened		
			following facts are re "The nearest breeding the study site. The lin the world with an Barnes, 1998) Loc	aluation submitted with the Section 24 ecorded in relation to the Cape Vultureing colony is located at Kransberg apport Kransberg colony is also the largest Cestimated c. 900 breeding pairs (as escally it appears that tourism and mining actors that threaten the breeding succ	colony: coximately 10 km north of ape Vulture breeding colony timated in the late 1990s; g operations in the area are		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.
			(Barnes, 1998)."		who are considered the Core		Specialist reports are also attached to this Section 24G EIR.
11/04/2014	Werksmans Attorneys	Justin Truter	Vulture colony to the	uation includes a Google map showing property.  dy does not make mention of the nega			Refer to responses below.  Specialists were tasked to clearly reflect the impacts
Letter	(on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	blasting or future bla submitted that, cons material omission. T	asting, on the breeding success of the idering the importance of this colony of the failure to provide such information in and presents a further basis on which	Cape Vulture. It is f Cape Vultures, this is a constitutes a fundamental		arising from activities associated with the unlawful road construction. This Section 24G draft EIR has thus been revised to include impact assessments from the specialist reports (refer to Section 4.2 for the impact assessment table). Refer also to Appendix F1 and F15 for the specialist reports.
							A specialist was also appointed to conduct a study on the Cape Vulture Colony and the impacts associated with the construction activities of the prospecting roads. (Appendix F15)



13.8 Ir	mpact on bats:		
	3.8.1	According to the Section 24G NEMA Report, the following	The specialist study on bats was conducted by Ernest
	0.0.1	information was extracted from the "Assessment of the bats at	Seamark and Teresa Kearny from African Bats (duly
		Gatkop Cave, and possible mitigation measures" report compiled by	qualified to conduct the assessment) in January 2012.
		Kearney and Ernest, (2012). <sup>36</sup>	An update on this report was done in March 2014.
1	3.8.2	The Gatkop cave is located 24.61799 °S, and 27.65235 °E on the	
	0.0.2	farm Randstephne 455KQ, 436m north of the Sandspruit River and	CVs of specialists are attached in Appendix D.
		approximately 4 kilometres from the property. The Gatkop cave is at	a va a va apostanti a a a a a a a a a a a a a a a a a a a
		the foot slope of the mountainous area and is not situated at the	Specialists were tasked to clearly reflect the impacts
		higher altitudes where prospecting took place. The cave serves as a	arising from activities associated with the unlawful road
		habitat for seven species of bats (C. percivali, H.caffer, R.blasii, R.	construction. This Section 24G draft EIR has thus been
		simulator, N. thebaica, M. tricolor, and M.natalensis).	revised to include impact assessments from the
1	3.8.3	Given the large numbers of female <i>M.natalensis</i> relative to the other	specialist reports (refer to Section 4.2 for the impact
		species, it appeared <i>M.natalensis</i> is still using the cave as a	assessment table). Refer also to Appendix F5 for copies
		maternity roost. The following species may also have used the cave	of specialist reports.
		as a maternity roost: <i>R. blasii</i> , <i>R. simulator</i> , <i>N. thebaica</i> , and <i>M.</i>	
		tricolor.	Refer to Section 4.2 of this Section 24G EIR where
1	3.8.4	According to the IUCN Red List assessment categories of the last	environmental impacts associated with the road
		regional assessment (Friedmann and Daly, 2004), of the species	construction for prospecting activities are assessed.
		two were listed as near threatened (R.hildebranti, M.natalensis,	0
		M.tricolor), and one each were listed as Vulnerable (R.blasii) and	
		Critically Endangered (C.percivali). Even though <i>M.natalensis</i> is not	
		the species with the most threatened conservation status, in the	
		context of the conservation of the bat populations roosting at Gatkop	
		Cave, it is the specialist's opinion that <i>M.natalensis</i> is the species	
		most at risk to any potential damage to this roost. Gatkop Cave has	
		been documented as a maternity roost for <i>M.natalensis</i> species	
		since 1967, at which time it was noted the roost must have been in	
		use for some time before that given the deposition of guano (van der	
		Merwe, 1973a). It is also one of only two maternity roosts for this	
		species known in the bushveld region and of those was recorded as	
		supporting the larger population. Van der Merwe (1973a) recorded	
		Gatkop Cave (Sandspruit Cave No.1) as having more individuals	
		(estimated 158 900 juvenile <i>M.natalensis</i> in 1967 and 110 000 in	
		1974) than Peppercorn's Cave at Makapans (estimated 49 000	
		juvenile M. natalensis in 1967 and 59 000 in 1974). As evidenced by	
		the results of the site survey, the high level of fidelity shown in the	
		continued use of Gatkop Cave as a maternity roost by <i>M.natalensis</i>	
		indicates the preservation and conservation of this cave is significant	
	0.0.5	for the long-term stability / security of the population of this species.	
1	3.8.5	Notwithstanding the fact that the Gatkop cave is below the property,	
		it is of concern that the unlawful blasting and clearing activities during the unlawful construction of the road has already had	
		significant adverse impacts on the bat population (including the	
		ecosystems supported by these bats). These impacts are not	
		adequately assessed in the section 24G reports. The impacts of the	
		construction activities (including further blasting) on the bat	
		population and the ecosystem supported by the bats must be	
		assessed and reported on by a duly qualified, independent specialist	
		before the application can be considered. The failure to provide such	
		information constitutes a fundamental gap in the application and	
		presents a further basis on which the application should be refused	
1			1

 $<sup>^{\</sup>rm 36}$  Refer to Appendix F5 for comprehensive details of this study.



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments		Date of Acknowledgement of Receipt by Shangoni	Response
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	sp on oc Gi ( <i>P</i> Th "vu Pr ac un ( <i>P</i> al al alr an the as be	esection 24G report records that, although no herpetofauna ecies of global conservation concern (IUCN 2012) were observed the study site, three species of local conservation concern may cur here namely the African Rock Python (Python natalensis), the ant Bullfrog (Pyxicephalus adspersus) and the African Bullfrog yxicephalus edulis). African rock pythons are listed in the List of reatened Species under NEMBA as protected species and as ulnerable" by the South African red data book (Branch 1988). Du eez & Carruthers (2009) list the Giant Bullfrog (Pyxicephalus Ispersus) as "vulnerable" while the List of Threatened Species der NEMBA lists both the Giant and African Bullfrog species yxicephalus spp.) as protected.  Is of concern that the unlawful road construction activities have eady adversely affected these protected species and the habitats decosystems that they form part of and support. The impacts on ese species and their ecosystems must be must be properly sessed and reported on by a duly qualified, independent specialist fore the application can be considered. The failure to provide such ormation constitutes a fundamental gap in the application and esents a further basis on which the application should be refused.		A duly qualified herpetologist was used in the assessment of the impacts (refer to CV attached in Appendix D).  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	As Ja Ap ma co co co AF pu thi 13.10.2 Th Ma the res bid int rel loc ga 13.10.3 Th to Th rec Dis in be	e following information was extracted from a Visual Impact sessment ("VIA") study compiled by Zoneland Solutions, dated nuary 2014, attached to the section 24G NEMA report as spendix F9. This study was recently updated with a VIA dated 17 arch 2014 that was circulated for public consideration and mment 3 days ago. As we have stated, the 3 days afforded us to nsider and comment on the updated VIA is insufficient and all I & 2's should be afforded a further 30 days from the date of the blication and circulation of the latest VIA to give consideration to is latest iteration and comment thereon.  The VIA notes that the project site is situated a mere 8km from the arakele National Park, to the north. The National Park also forms are core of the Waterberg Biosphere Reserve, a special type of serve which promotes solutions to reconcile the conservation of adiversity with its sustainable use. Biosphere reserves are ernationally recognised, dominated by national governments and main under sovereign jurisdiction of the states in which they are cated. In addition to the above, several private nature reserve and me lodges are found in the immediate vicinity of the project site.  The VIA records that the Thabazimbi municipality recognises that the urism is becoming an increasingly important industry in the area. Thabazimbi Integrated Spatial Development Framework (2007) cognises the importance of tourism, particularly in the Waterberg strict. It is furthermore stated that there is a rapid growth expected the tourism sector of the Province and District. This is mainly cause of the growing annual flow of tourists to Limpopo who gard the Bushveld as a popular tourism destination.		IAP's are provided with another 40 day comment period to review this Section 24G EIR, and supporting specialist reports (including visual impact assessment)  Note that this Section 24G EIR refers specifically to the existing constructed roads. A separate visual impact assessment has been undertaken for the existing unlawful road construction, refer to the updated specialist report in Appendix F9, and should not be confused with the report as referenced to in the letter.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.  Specialist reports are also attached to this Section 24G EIR as contained within Annexure F.



		13.10.4 13.10.5 13.10.6	The VIA records further that the municipal Spatial Development Framework ("SDF") states that the areas surrounding the Marakele National Park, particularly the mountainous areas, are identified as potentially environmentally sensitive areas. The SDF expressly states that sensible development should take place around the Park to contribute towards the Park's long term development. The SDF states further that it is of utmost importance that activities in these areas are managed according to planning and environmental guidelines to prevent a substantial detrimental effect on the environment.  As part of the study, one dominant <i>view corridor</i> was identified in the region, namely the: P240, which is the main movement route along the southern boundary of the contravened site.  The contravened site is located between contour levels 1000 and 1582m above sea level. This represents a 582m vertical climb over ±4.3km. The Meletse peak is the highest peak within 10km from the contravened site. According to the VIA, the mountain is therefore particularly visually exposed and visible from most observation points in the landscape as all observation points are located at a height below the contravened site.	
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	13.10.7	The section 24G report confirms that a significant visual impact has been caused, affecting surrounding landowners (for an extended distance) as a result of extensive scarring on the mountain due to the unlawful road construction. As per the photograph below, the visual impacts of the unlawful road construction are severe.  The VIA notes that visual (light) pollution is anticipated as a result of the elevation and exposure of the mining area and the fact that it is generally accepted that lighting is required for 24 hour operations and that several high-mast lights with high intensity discharge (HID) lamps will be introduced. No specific lighting plan has been provided for the proposed mine. The project site has a very low illumination factor. The occurrence of light sources in the vicinity of the project site is strictly confined to individual farmsteads, tourist lodges and related uses and the occasional by-passing road traffic. According to the VIA, The extent of the light sources is such that no sky glow effect is visible in the area. The latter is only evident in the larger settlements such as Thabazimbi. Even though no specifications with regards to proposed lighting were provided, it is expected that the proposed mining infrastructure will include a range of light sources. Structures and ground surfaces that are highly illuminated can be clearly visible for long distances, especially on clear nights. A primary cause of light pollution is unshielded outdoor illumination fixtures.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.  Specialist reports are also attached to this Section 24G EIR.  Impacts associated with the proposed mining and related activities will form part of the Scoping- and EIA process.
		13.10.9	These concerns are germane to the light pollution that will be caused as a result of vehicles traversing the unlawful roads at night at an elevation that will result in such lights being visible for up to 10 kilometres. These particular visual impacts in relation to the use of the unlawful road are not addressed in the VIA- another material omission.	Specialists were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction. This Section 24G draft EIR has thus been revised to include impact assessments from the specialist reports (refer to Section 4.2 for the impact assessment table). Refer also to Appendix F9 for a copy of specialist report pertaining to visual impact associated with the unlawful road construction.



		13.10.10	The VIA concludes that the visual impacts that will be caused by the mining activities will be permanent in duration, very high in magnitude, of a high negative significance rating, will result in the permanent, irreversible and irreplaceable loss of the resource, regardless of mitigation measures.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Proposed mining related activities will form part of the Scoping- and EIA process
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	13.10.11	Again these findings are germane to the visual impacts that have been caused, and will continue to be caused, as a result of the unlawful clearing and road construction activities conducted by Aquila, until such time as the unlawful clearing has been rehabilitated.  The VIA records, further that it is expected that the cumulative impact of the proposed activity would be direct (loss of views onto a	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.
		the activity). The cumulative effect would also be time crowding (e.g. the constant movement of heavy vehicles through the area) and space crowding (e.g. the rapid introduction of large-scale	mountain) and indirect (possible loss in property values as a result of the activity). The cumulative effect would also be time crowding (e.g. the constant movement of heavy vehicles through the area) and	Specialist reports are also attached to this Section 24G EIR.  Impacts associated with the proposed mining and related activities will form part of the Scoping- and EIA process.
			Dust caused by mining operations is listed as a concern in the VIA as it is expected to have a visual impact, especially where dust clouds extend above tree canopies and landscaping features. The causes of such dust plumes are commonly associated with trucks being driven on unsealed roads, rock crushing operations, drilling operations and wind blowing over areas disturbed by mining. The VIA notes that, although it is difficult to model the visual impact since the degree of visibility will differ depending on climatic conditions (especially wind and temperature conditions), the nature of operations (e.g. intermittent explosions and movement of hauling trucks), and proximity to the mine, it must, however, be noted as a concern, especially where suspended dust particles will contribute to the sky glow effect of night time lighting (MetroGIS, 2009).	IAP's are provided with another 40 day comment per to review this Section 24G EIR, and supporting special reports (including visual impact assessment)  Note that this Section 24G EIR refers specifically to existing constructed roads. A separate visual impassessment has been undertaken for this exist unlawful road construction, refer to the update specialist report in Appendix F9, and should not confused with the report (and associated visual imparting projections) as referenced to in the letter
		13.10.14	The following before and after images are copied from the VIA and show a modelled impact on the mining area in the preferred alternative from key observation point 25. It is clear from this model that the proposed mining activities will destroy the Meletse Mountain and result in the permanent, irreversible and irreplaceable loss of the resource, regardless of mitigation measures, as confirmed in the VIA.	
		BEFORE	AFTER	



Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	13.10.15  The VIA does not address the visual impacts of the unlawful clearing of vegetation and construction of roads in any great detail and therefore does not address issues such as the impacts of Aquila's unlawful activities on the sense of place of the area and on tourism. It is submitted that this too is a fundamental gap in the section 24G NEMA Report – the EAP must place the decision-maker in a position to ascertain to what degree the unlawful activities have and will continue to have an impact on the rural sense of place and the socio-economic impacts of this, in turn, on tourism, game farms etc. The EAP has failed to do so and the section 24G NEMA Report must be rejected on this basis alone.		Specialists were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction. This Section 24G draft EIR has thus been revised to include impact assessments from the specialist reports (refer to Section 4.2 for the impact assessment table). Refer also to Appendix F9 for copies of specialist report.
			<ul> <li>Noise and vibration impacts, including impacts caused by blasting:</li> <li>13.11.1 Aquila's unlawful road construction involved extensive blasting in contravention of, inter alia, its prospecting rights and EMP.</li> </ul>	-	Refer to responses below.  As per the specialist report, limited information is available with regards to monitoring the effect of blasting
			13.11.2 The Ground Vibration study included with the Section 24G NEMA report concedes that it cannot estimate or assess the impacts of blasting on animal behaviour, including reproduction. As recorded in the ecological study attached to the section 24G application, the mining area and surrounding areas are home to numerous endangered, protected and threatened red data species of animal and supports a very sensitive ecosystem.		on wild animal behaviour including reproduction. Refer to discussions within Section 4.2 where further discussions pertaining to such impacts are discussed.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
			The absence of any assessment in relation to the impacts of blasting on these animals and this ecosystem is a fundamental gap in the information before both the minerals and environmental decision-makers and no statutory approvals should be considered until the impacts of these activities on the environment can be confirmed.	_	Social Fra Environment of Capitalities to EESEV.
			A further omission in the Vibration study is the failure to assess the impacts of vibration caused by blasting on the important breccia that has developed in the Gatkop Cave.		The Blasting and Vibration specialist report includes impacts of blasting on the cave. Also, the Palaeontological assessment includes information with regards to the breccia found in the cave (refer to Appendix F3). Also refer to the impact assessment (Section 4.2) dealing with impact on the breccia.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	13.11.5 Finally, it is submitted that the report has patently failed to have regard to the fact that the ambient noise levels currently enjoyed are those associated with a rural, game farming location. The noise impacts were evaluated in an Environmental Noise Study conducted by Varicon cc. against the standards as specified in the SABS Code of Practice 0103 of 2008 (the measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication) with reference to Code SABS 0328 of 2003 (Environmental Noise Impact Assessments).	31/03/2014	A baseline report was done on the current noise levels (dated April 2011 – February 2012). This report indicated that the background noise levels (including prospecting activities) reads below the prescribed requirements (refer Section 3.5 of Page 7).
			13.11.6 According to the SABS Code, the day time ambient noise level for a rural area such as the subject area is 45dB, while at night the ambient noise level standard is 35dB. It is clear from the Noise Study that the ambient noise levels in the subject area are considerably lower than the average for a rural area.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.



			13.11.7	The Noise study records that, according to SABS 0103 of 2008, it is probable that noise will be annoying, or otherwise intrusive to the community, or to a group of people, if the rating level of the ambient noise exceeds the typical rating levels for the ambient noise i.e. 45 dB during the day and 35dB during the night. It is clear that the noise generated by the unlawful road construction which involved extensive blasting, and a minimum of 400 trucks per day or one truck every minute (according to the Applicant's own information) travelling along the roads to and from the mining area, will cause significant noise impacts in a sensitive rural environment.	The impacts as expressed in this correspondence are mainly related to the proposed Meletse Iron Ore Project. The purpose of this Section 24G EIR is to describe and assess the impacts associated with the previously constructed road network (in support of a rectification application to LEDET). The impacts associated with the proposed activities (as referred to in the correspondence) will be included in the Scoping Report and EIR (application for environmental authorisation for proposed activities associated with the project).
			13.11.8	We submit that the findings and recommendations contained in the Noise Study and Vibration Study fail to have adequate regard to the sensitive receiving and surrounding environment and sense of place. The excessive noise levels created by the blasting undertaken in constructing the roads have no doubt had a negative effect on the rural ambiance and sense of place and the area's eco-tourism and game breeding and farming activities likely resulting in the diminution in property and farm values, and further mining activities will only exacerbate these negative impacts.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Specialists were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction. This Section 24G draft EIR has thus been revised to include impact assessments from the specialist reports (refer to Section 4.2 for the impact assessment table). Refer also to Appendix F8 and F11 for copies of specialist reports.
			13.12 13.12.1	Water use activities:  It is noted that some of the unlawfully constructed gravel roads cross various natural drainage lines within the valley. This activity is listed under Section 21 (c) impeding or diverting the flow of water in a watercourse and (i) altering the bed, banks, course or characteristics of a watercourse in terms of the NWA and requires a water use license, which the applicant is not in possession of.	An Integrated Water and Waste Management Plan is in the process of being compiled in support of an Integrated Water Use License Application.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	13.12.2	During the construction of the gravel roads, the applicant also embarked on pumping of water from the borehole for utilisation by the drill rigs and for dust suppression. This activity is listed under section 21(a) in terms of the NWA. According to the GN 399 General Authorisations, dated March 2004, in terms of Section 39 of the NWA, a person who takes more than 50 m³ from surface water or 10 m³ of groundwater on any given day requires to register the water use. The quantity of water abstracted from the boreholes is more than 10 m³ per day, and therefore registration of this water use activity was required.	Section 2.2 of this Section 24G EIR provides more detail pertaining to the abstraction of water from boreholes.  Information on quantities of abstraction was obtained from the water use registration as compiled (13 May 2011) and submitted to the DWA. This Indicates a total volume for abstraction of 6130 m3/year (maximum pumping hours of 56 per week). Assuming 8 hours per day, this equates to 15 m3/day.  Water use registration was undertaken (originally submitted in May 2011) with follow up to the Department in July 2012.
			13.12.3	The unlawful roads cross the natural drainage lines, causing an impact on surface water quality and surface water flow patterns. A change in surface water flow patterns may impact on catchment yield, affecting the surface water quantity for downstream users. Increase in surface water flow from the road may cause erosion hereby increasing the amount of sediments found in the water impacting on the water quality for nearby users.	Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the road construction for prospecting activities are assessed.



		13.12.4	Surface water quality: The northern part of the site falls within the River Freshwater Ecosystem Protected Area ("FEPA") and associated subcatchment area. River FEPA's achieve biodiversity targets for river ecosystems and threatened/near threatened fish species, and were identified in rivers that are currently in a good condition (A or B ecological category). Their FEPA status indicates that they should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources. FEPA status applies to the actual river reach within such a subquaternary catchment.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		13.12.5	The integrity and quality of the groundwater resources is of paramount importance considering groundwater is the only sole source of water for the majority of the surrounding farms. The impact of the unlawful construction must be property assessed and provided to the authority so that an informed decision may be made. The failure to provide such information constitutes a fundamental gap in the application and presents a further basis on which the application should be refused.	Specialists were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction. This Section 24G draft EIR has thus been revised to include impact assessments from the specialist reports (refer to Section 4.2 for the impact assessment table). Refer also to Appendix F2 for copies of specialist reports
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	13.13 13.13.1	Socio-economic impacts:  There has been a fundamental failure to address the social and economic impacts of the unlawful road construction and scarring of the Meletse mountainside on the affected communities. These impacts include impacts on eco-tourism in the area, one of the main economic drivers as confirmed in the Municipal SDF, the socio-economic impact that has been caused by the destruction of a sensitive ecosystem that supports many endangered and threatened species, impacts on farming, including stock and game farming activities, impacts on communities that view the mountain as a place of spiritual, cultural, religious and ancestral significance. <sup>37</sup>	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Specialists were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction. This Section 24G draft EIR has thus been revised to include impact assessments from the specialist reports (refer to Section 4.2 for the impact assessment table). Refer also to Appendix F12 and F14 for copies of specialist reports.
		13.13.2	It is submitted that these impacts cannot adequately be considered by the decision-maker until such time as the Applicant has commissioned and presented comprehensive, independent specialist anthropological reports and Social and Economic Impact Assessments, <sup>38</sup> which will require proper engagement and consultation with all affected parties including an opportunity to comment and respond to these studies.	An anthropologist was appointed. The resultant report is attached in Appendix F16. Refer also to the Social Impact Assessment and Economic specialist study (in Appendix 12 and Appendix F14).
		13.14 13.14.1	Traffic impacts:  The unlawful roads, and the proposed mining activities for which these roads form an integral part, are at an elevation that will result in visual impacts that will result in permanent, irreversible and irreplaceable loss of the resource, regardless of mitigation measures, according to the applicant's own VIA.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		13.14.2	Neither the VIA, nor the Noise or Dust impact studies deal with the visual, noise and dust impacts that will be created by in excess of 400, and potentially up to 700, heavy trucks traversing the mountainside at a rate of at least one every minute. <sup>39</sup> No independent specialist traffic impact assessment ("TIA") is presented with the applicant's section 24G NEMA application, nor is there any TIA before the minerals authority at this point.	The impacts as expressed in this correspondence are mainly related to the proposed Meletse Iron Ore Project. The purpose of this Section 24G EIR is to describe and assess the impacts associated with the previously constructed road network (in support of a rectification application to LEDET). The impacts associated with the proposed activities (as referred to in the

<sup>&</sup>lt;sup>37</sup> See Kearney, T. & Seamark, E. 2012. Africabats.org. *Assessment of the bats at Gatkop Cave, and the possible mitigation measures* at page 39.

<sup>&</sup>lt;sup>39</sup> This was also raised in the public participation chapter of the EMP submitted in respect to the mining right application.



<sup>&</sup>lt;sup>38</sup> As recommended by Kearney, T. & Seamark, E. 2012.Africabats.org. *Assessment of the bats at Gatkop Cave, and possible mitigation measures* at page 39.

3.14.3 It is therefore not possible for the authority to determine the impacts that this dramatic escalation in traffic will have on the roads in the area, let alone of the sensitive receiving and surrounding environment and on affected parties rights and interests. This is a fundamental and, it is respectfully submitted, fatal omission in the information before the authority and a further basis on which the application should be refused.	correspondence) will be included in the Scoping Report and EIR (application for environmental authorisation for proposed activities associated with the project).  Specialists were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction. This Section 24G draft EIR has thus been revised to include impact assessments from the specialist reports (refer to Section 4.2 for the impact assessment table). Refer also to Appendix F18 for copies of traffic specialist report.
3.15. Cultural and Heritage:  3.15.1 The applicant's activities also involved activities that required the prior consent of the relevant heritage authority under section 38(1) of the NHRA which lists the following activities:  3.15.1.1 the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;  3.15.1.2 any development or other activity which will change the character of a site: exceeding 5 000m² in extent.	NHRA section 38(1) states the following:  (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as -  (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;  (b) the construction of a bridge or similar structure exceeding 50 m in length;  (c) any development or other activity which will change the character of a site -  (i) exceeding 5 000m2 in extent; or  (ii) involving three or more existing erven or subdivisions thereof; or  (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or  (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;  (d) the re-zoning of a site exceeding 10 000m2 in extent; or  (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,  must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.  SAHRA was notified of the activities as part of the Section 24G Rectification application process on 11 March 2014 (refer to Appendix E3).  Furthermore, a heritage impact assessment was conducted and the report aligned to SAHRA'S recommendations (refer to Appendix F4), and is uploaded on the SAHRA Website.

Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments	Date of Acknowledgement of Receipt by Shangoni	Response
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	The surrounding community enjoys the right to freedom of religion as stipulated in section 15 of the Constitution. In addition, section 31 of the Constitution specifically protects the rights of any persons belonging to a cultural, religious and linguistic community to practise their religion and culture.  The unlawful activities undertaken by the applicant along the Meletse mountain slopes has had the effect of desecrating an area of great cultural, spiritual and ancestral significance to the community and their spiritual leaders while the proposed mining activities will have the effect of eroding the community and its spiritual leaders' rights to practise their culture and religion on and around and in relation to the mountain. The applicant's conduct is in direct contravention of the objectives and prescripts of the Religion and Culture Act, in so far as the right of the community to develop and practise its culture, religion and to develop its heritage is and has been hampered by the applicant's unlawful activities.  The applicant has not consulted meaningfully or at all with the community and/or any leadership structures of the community, as envisaged in the objectives of the Traditional Leadership Act. This is confirmed in the public participation section of the EMP dated March 2014, submitted in respect of the application for the mining right over the property.		Applicant Response: "An attempt to consult with religious leaders took place. The applicant organised a meeting to consult with the local community Sangomas and spiritual leaders as far back as 15 October 2012. The meeting request was accepted by Ms Yvonne Kgotlang and as the local user she was organising the other users to attend. On the day they decided not to attend."  Refer to Appendix E9 for copies of letters in this regard. The traditional healers are included in the project's IAP database and are consulted as part of the current public participation process (refer to Table 47 for the IAP database).  Furthermore, an Anthropologist was appointed on the 17th of March 2014, who consulted directly with the traditional healers namely Yvonne Kgotholong in particular. The specialist report is attached to this Section 24G EIR as Appendix F16.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	Refer above.		Two further community meetings were held on the 12th of June 2014 (at Rooiberg and Regorogile), and the traditional healers were notified telephonically prior thereto (as per list obtained by Anthropologist). Refer attendance list in Appendix E7.  Applicant Response:  "Since July 2011 a number of public meetings were held where the impacts of prospecting and the proposed mining activities were discussed and parties provided the opportunity to raise their concerns. These meetings took place on the following dates: 30 July 2011 (prospecting meeting), 02 December 2011 (prospecting meeting), 11 March 2012 (prospecting meeting), and 18 December 2013 (DMR meeting with representatives of Rooiberg



				Bewaria, and 01 February 2014 (public meeting or Environmental Authorisation processes – EIA and
11/04/2014	Werksmans Attorneys Justin Truter	13.15.5	It is submitted that the levels of consultation with affected communities do not meet	Section 24G)."  Refer above.
Letter	(on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")		the standards required under NEMA, the MPRDA or the NHRA and are in further violation of the affected community's rights under sections 15 and 31 of the Constitution, the Traditional Leadership Act and the Religion and Culture Act. The identification and assessment of heritage resources has been totally inadequate and	
			the relevant minerals authority does not have adequate information relating to the impacts on heritage resources before him/her to determine whether the application should be permitted. On the contrary, it is submitted that the impacts on heritage resources further militate against the approval of the application and continued activities on the property by the applicant.	
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf	13.15.6	The Meletse mountains and their caves, specifically the Gatkop Cave, have significant spiritual, ancestral and cultural heritage importance to the local	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
	Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")		community and their Sangomas, as well as certain church based groups in the area and there are also numerous significant historical graves and burial sites located on and around the property.	Refer to the results of the Anthropology study results, as contained in Appendix F16, as well as Section 4.2 of this Section 24G EIR.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf	13.15.7	The significance of the caves is confirmed in the public participation section of the EMP (referred to in paragraph 12.14.4 above), where it states that the community	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Ltd and Calshelf 173		regards the cave as a sacred place and the community uses the cave for spiritual reasons, possibl[y] as far back as 400 to 500 years. The use of the cave for religious and cultural purposes "for some time already" is confirmed in the report by Kearney, T. & Seamark of Africanbats.org. <sup>40</sup>	Refer to the results of the Anthropology study results, as contained in Appendix F16, as well as Section 4.2 of this Section 24G EIR.
		13.15.8	Our investigations have shown that there is a "Chief Sangoma", based in Bela, who has brought hundreds of people to the caves and to <i>Madimatle</i> (being the name for	
			the Meletse mountain as used by the community) over the years, who have come from other areas of South Africa. The significance of Madimatle mountains is therefore not limited only to the people in the surrounding areas, but is significant to people across the country, and possibly to the neighbouring countries.	
		13.15.9	Further research has also yielded literature which makes reference to the cultutal and religious significance of Madimatle. Renowned Tswana novelist D.P.Moloto published his book entitled "Moji mothlabi" in 1964, in which the practice of ancestral	
			rituals by the main character through Madimatle ("Beautiful Blood") is detailed extensively. A further example of such literature is entitled <i>"Madimatle"</i> , by a T K	
			Malebye published in Setswana by Van Schaick on 31 March 1997, which features a short story on the significance of the Madimatle mountains. The historical, spiritual and cultural significance of the area is therefore well documented.	
		13.15.10	Section 3(1) of the NHRA provides that for the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.	
		13.15.11	There can be no doubt that the Meletse mountains and surrounding area constitutes an area which has significant heritage resources which are of cultural significance or other special value for the present community and for future generations and must be considered part of the national estate and fall within the sphere of operations of	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
			· · · · · · · · · · · · · · · · · · ·	



<sup>&</sup>lt;sup>40</sup> At page 39.

Date and Manner of Comment	Interested and Affected Party (IAP)	Contact Person	Comments		Date of Acknowledgement of Receipt by Shangoni	Response
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	and beli right of a manage  13.15.13 It is clea as entre local co participa may affe with the applicat Act and	5(4) provides that heritage resources form an important part of the history efs of communities and must be managed in a way that acknowledges the affected communities to be consulted and to participate in their sment.  The that, aside for the right to lawful, reasonable and fair administrative action, enched under the Promotion of Administrative Justice Act, 2000 ("PAJA"), the mmunity must also be consulted and be afforded an opportunity to ate in the management of any heritage resources and any decisions that ect the heritage resources. There has been a distinct lack of consultation affected community, including the Sangoma community, in terms of the ions under the MPRDA <sup>41</sup> , NEMA, NWA, NEMWA, the Traditional Leadership the Culture and Religion Act and this constitutes a fatal flaw in the ion processes under these Acts.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Applicant Response:  "An attempt to consult with religious leaders took place. The applicant organised a meeting to consult with the local community Sangomas and spiritual leaders as far back as 15 October 2012. The meeting request was accepted by Ms Yvonne Kgotlang and as the local user she was organising the other users to attend. On the day they decided not to attend."  Refer to Appendix E9 for copies of letters in this regard.  The traditional healers are included in the project's IAP database and are consulted as part of the current public participation process (refer to Table 47 for the IAP database).  Furthermore, an Anthropologist was appointed on the 17th of March 2014, who consulted directly with the traditional healers namely Yvonne Kgotholong in particular. The specialist report is attached to this Section 24G EIR as Appendix F16.  Two further community meetings were held on the 12th of June 2014 (at Rooiberg and Regorogile), and the traditional healers were notified telephonically prior thereto (as per list obtained by Anthropologist). Refer attendance list in Appendix E7.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	may at I significa that it in	nformation that we have it would appear that a portion of the affected area east qualify for designation as a Grade II heritage site of provincial heritage ance and may be significant enough to qualify for Grade I status on the basis cludes heritage resources with qualities so exceptional that they are of national significance.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  The heritage impact Assessment report is attached in Appendix F4. Refer also to the impacts described in Section 4.2 of this Section 24G EIR.
			adequat	ar that the full extent of the impacts of the applicants activities have not been tely considered, and that South African Heritage Resources Agency A") has not been informed.		Specialists were tasked to clearly reflect the impacts arising from activities associated with the unlawful road construction. This Section 24G draft EIR has thus been revised to include impact assessments from the

Refer to the requirements in respect of community consultation and participation as set out by the Constitutional Court in <u>Bengwenyama Minerals (Pty) Ltd and Others v Genorah Resources (Pty) Ltd and Others (CCT 39/10) [2010]</u>



		13.15.16 It is clear that the applicant's activities trigger a number of the activities identified under section 38(1) of the NHRA and, as such, will require an independent specialist heritage impact assessment that meets the minimum requirements of section 38(3) of the NHRA. The heritage assessment that has been undertaken and has been submitted as part of the section 24G NEMA application process does not meet the minimum requirements of section 38(3). It is not evident from our instructions that SAHRA has been notified as required under section 38, prior to the unlawful clearing of the road or in relation to the proposed mining rights and activities.  13.15.17 The following sites of cultural heritage significance, including grave sites are	specialist reports (refer to Section 4.2 for the impact assessment table). Refer also to Appendix F4 for copies of specialist report.  SAHRA has been informed with regards to the prospecting and proposed mining activities. (Refer to Appendix E3)  Your concerns are acknowledged and form part of this
		identified in the heritage report submitted with the section 24G NEMA application:  The grave of one J.H.T.O. Perreira is located on the banks of the Sondagsrivier close to the bridge. On the 1: 50 000 map 2427DA Sandrivierspoort the abbreviation 'R' represents a watering point (possibly an old 'drif' and 'uitspanning') on the 'old road'. The inscriptions on his headstone gives the following information; born in 1881 being a 'Burger' of the Z.A.R., occupation as 'Kruitmaker' and cause of death as 'Vermoor' in 1901. This is a rather interesting issue from the second South African War, as it is one of the few links to that period of our history here in Thabazimbi. The site should be seen to be of high significance, and treated accordingly.	Section 24G EIR that will be submitted to LEDET.  The heritage impact Assessment report is attached in Appendix F4. Refer also to the impacts described in Section 4.2 of this Section 24G EIR.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	13.15.17.2 The second site is the Gatkop Cave, a dolomitic cave that is of significant spiritual and religious significance and that is still regularly visited for religious purposes. According to the Heritage report "It is well defined by a sturdy game fence and is under supervision of one Thomas Mothloki. This site must be treated with utmost care from a cultural point of view. This is a site of considerable cultural, historical and archaeological significance, as recognised in the study of Iron Age archaeology of the Rooiberg region, Limpopo, by Hall (1981). Gatkop Cave probably played a role as a refuge site from Mzilikazi's Ndebele impis during the early nineteenth century Mfecane, and perhaps also later following the arrival of the European trekboers. It is apparent that the archaeological resources within the cave — such as the wooden kraals and abundant pottery recorded by Hall in the large entrance chamber - have since been considerably degraded. Surface scatters of archaeological material are still apparent in front of the mouth of the cave. These include ostrich eggshell beads, abundant shards of Iron Age pottery assignable to theLate Iron Age (Hall's 1981 Rooiberg Unit 3, approximately dated to the Fifteenth Century) as well as Middle Stone Age flakes of ferruginous quartzite (Amanda Esterhuysen, Madelon Tusenius, pers. comm, 2011).  13.15.17.3 In accordance with the brief for this paleontological site visit to Gatkop Cave, attention focused mainly, but not exclusively, on breccias within the cave infill. Some of these deposits, by analogy with breccias in dolomite caves in the Cradle of Humankind and Makapansgat Valley for example, might be bone-bearing and thus of considerable paleontological interest."	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  The heritage impact Assessment report is attached in Appendix F4. Refer also to the impacts described in Section 4.2 of this Section 24G EIR.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		13.15.17.4 The third site is the original Randstephne homestead. According to the Heritage report "It contains classical 'South African Edwardian' features in the flanked front veranda where both flanking rooms support Cape Dutch Gables. This building is one of few remaining in the region from this period as few were originally built, and of those most were lost in the processes of 'upgrading and modernisation'. A second phase recording is advised, and a 'preservation' plan must be put in place. This building and farmyard may be developed into site offices and/or accommodation for key personnel on the mine. SAHRA regulations must be adhered to. This building is of high significance and should be treated as such.  13.15.17.5 Closely associated with this homestead is the graveyard and former dwellings of the farm labourers that (one must assume), was the workforce of the dwelling on Randstephne. Owing to the physical nature of these dwellings they have long since	



		disappeared, but the graves remain, and are obviously still tended to from time to time by relations.	
11/04/2014 Letter	,	13.15.17.6 The 13 graves on the other hand are also protected under other laws apart from the NHRA. These may be left in situ, and visiting rights may be negotiated with relations. Alternatively they may be exhumed and reburied in a formal burial site. The second alternative is advised, as the water reservoir and associated mining works close to the cemetery may create tension between the mine and the relatives of the deceased. The graves are of high significance and should be treated as such.  13.15.17.7 The rest of the sites are all related to the early nineteenth century Iron Age period and has been treated as a collective. These include 'mines' (3), 'smelting sites' (1), 'animal enclosures' (4) and 'living areas' (2). The 'group' is assumed to date from the stressful civil war period known as the Mfecane, or Defecane dating to the period of Mzilikazi, the renegade Zulu General that ruled most of the central and south 'Transvaal' circa 1800 to 1845.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		13.15.17.8 The sites are individually not rare, or of outstanding quality, they are not deemed to be particularly worthy of preservation on their own. But, the information that can be retrieved from these sites as a collective is of special importance, as it has not yet been done so in the past by archaeologists in the region.  13.15.17.9 It is suggested that a full second phase study is undertaken to record and possibly date the sites through the carbon fourteen dating process. Although the sites are individually of low significance, the collective is worthy of research."	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  The heritage impact Assessment report is attached in Appendix F4. Refer also to the impacts described in Section 4.2 of this Section 24G EIR, and the recommended mitigation measures.
		13.15.18  It is submitted that on this basis the application cannot be granted as the authority cannot satisfy him/herself on the information tendered that the affected communities have been adequately consulted and that the assessment of impacts on heritage resources have been adequately addressed and that the assessment meets the minimum requirements of section 38(3) of the NHRA and that the relevant heritage authority's comments and recommendations have been taken into account. None of these requirements have been met.	Applicant Response:  "An attempt to consult with religious leaders took place. The applicant organised a meeting to consult with the local community Sangomas and spiritual leaders as far back as 15 October 2012. The meeting request was accepted by Ms Yvonne Kgotlang and as the local user she was organising the other users to attend. On the day they decided not to attend."  Refer to Appendix E9 for copies of letters in this regard.  Shangoni Response: The traditional healers are included in the project's IAP database and are consulted as part of the current public participation process (refer to Table 47 for the IAP database).  The heritage impact Assessment report is attached in Appendix F4. Refer also to the impacts described in Section 4.2 of this Section 24G EIR. The report was loaded onto SAHRIS.  Furthermore, an Anthropologist was appointed on the 17th of March 2014, who consulted directly with the traditional healers. The specialist report is attached in Appendix F16.
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	14 A discussion of the relevant legal framework and the flaws in the section 24G NEMA application:  14.1 NEMA is the overarching framework environmental management Act regulating environmental activities in South Africa. The framework created under NEMA ensures the legislative concretisation of the environmental rights guaranteed in section 24 of the Constitution of the Republic of South Africa. In its nature as a framework Act it embraces various fields of environmental concern, namely, resource conservation and exploitation, pollution control and waste management, and land use planning and development.	Noted.



		14.2 The NEMA principles set out in section 2 apply throughout the Republic to the actions of all	Noted.
		organs of state that may significantly affect the environment. Important for the purposes of	
		these comments is, section 2(4) requires that a <u>risk-averse and cautious</u> approach is	
		applied, which takes into account the <u>limits of current knowledge</u> about the consequences	
		of decisions and actions and that <u>negative impacts</u> on the environment and <u>on people's</u>	
		environmental rights be anticipated and prevented, and where they cannot be altogether	
		prevented, are minimised and remedied.	
		14.3 Section 2(2) of the NEMA principles states that "[e]nvironmental management must place	-
		people and their needs at the forefront of its concern, and serve their physical,	
		psychological, developmental, cultural and social interests equitably.	
11/04/2014	Werksmans Attorneys   Justin Truter	14.4 Further to the abovementioned principles, subsection 2(4) contains provisions that are	Noted.
Letter	(on behalf of Calshelf	applicable to this object, these include that the:	
Lotto	Investments 172 (Pty)	14.4.1 disturbance of ecosystems and loss of biological diversity are avoided, or, where they	
	Ltd and Calshelf 173	cannot be altogether avoided, are minimised and remedied, <sup>42</sup>	
	(Pty) Ltd ("Calshelf")	14.4.2 pollution and degradation of the environment are avoided, or, where they cannot be	
	(Fty) Ltd ( Gaistlett )		
		altogether avoided, are minimised and remedied, <sup>43</sup> 14.4.3 negative impacts on the environment and on people's environmental rights be	
		anticipated and prevented, and where they cannot be altogether prevented, are	
		minimised and remedied;44	
		14.4.4 social, economic and environmental impacts of activities, including disadvantages and	
		benefits, must be considered, assessed and evaluated, and decisions must be	
		appropriate in the light of such consideration and assessment,45 and	
		14.4.5 sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores,	
		estuaries, wetlands, and similar systems require specific attention in management and	
		planning procedures, especially where they are subject to significant human resource	
		usage and development pressure.46	
		14.5 Section 28(1) of NEMA introduces a far reaching, prospective and retrospective duty	
		of care to prevent, control, mitigate and rehabilitate any significant pollution or	
		environmental degradation and provides that every person who causes, has caused	
		or may cause significant pollution or degradation of the environment must take	
		reasonable measures to prevent such pollution or degradation from occurring,	
		continuing or reoccurring, or insofar as the harm to the environment is authorised by	
		law or cannot reasonably be avoided or stopped, to minimise and rectify such	
		pollution or degradation of the environment. Failure to comply with the environmental	
		duty of care is an offence.	
		14.6 Without limiting the generality of the duty in subsection (1), the persons on whom	-
		subsection (1) imposes an obligation to take reasonable measures, include an owner	
		of land or premises, a person in control of land or premises or a person who has a	
		right to use the land or premises on which or in which	
		any activity or process is or was performed or undertaken; or	
		any other situation exists,  which accepted the second or in likely to accept in likely to accept the likely the likely to accept	
		which causes, has caused or is likely to cause significant pollution or degradation of	
		the environment.	



<sup>&</sup>lt;sup>42</sup> Section 2(4) (a) (i).

<sup>&</sup>lt;sup>43</sup> Section 2(4)(a)(ii).

<sup>44</sup> Section 2(4)(a)(viii).

<sup>&</sup>lt;sup>45</sup> Section 2(4)(i).

<sup>&</sup>lt;sup>46</sup> Section 2(4)(r).

11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")  Werksmans Attorneys  Werksmans Attorneys  Justin Truter	14.7 The measures required in terms of subsection (1) may include measures to  investigate, assess and evaluate the impact on the environment;  inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment;  caese, modify or control any act, activity or process causing the pollution or degradation;  cantain or prevent the movement of pollutants or the causant of degradation;  eliminate any source of the pollution or degradation; or  remedy the effects of the pollution or degradation.  14.8 Significantly, section 28(4) provides that the Director-General or, in the instant case, a provincial head of department may, after consultation with any other organ of state concerned and after having given adequate opportunity to affected persons to inform him or her of their relevant interests, direct any person who fails to take the measures required under subsection (1) to -  investigate, evaluate and assess the impact of specific activities and report thereon;  commence taking specific reasonable measures before a given date;  diligently continue with those measures; and  complete them before a specified reasonable date.  Should a person fail to comply, or inadequately comply, with a directive under subsection (4), the Director-General or provincial head of department responsible for environmental affairs may take reasonable measures to remedy the situation or apply to a complete tour for appropriate relief.  14.10 The Director-General or provincial head of department may recover costs for reasonable remedial measures to be undertaken before such measures are taken, and all costs incurred as a result, from any or all of the following persons-  any person who is or was responsible for, or who directly or indirectly contributed to, the pollution or degradation or the potential pollution or degradation;  the owner of the land at the time when the pollution or degradation;  the a	Noted
Letter	(on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	14.11 The Director-General or provincial nead of department may in respect of the recovery of costs, claim proportionally from any other person who benefited from the measures required to be undertaken.  14.12 If more than one person is liable under this section, the liability must be apportioned among the persons concerned according to the degree to which each was responsible for the harm to the environment resulting from their respective failures to take the measures required.  14.13 The Minister of Environmental Affairs identified lists of activities which may not be undertaken without prior environmental authorisation. These activities are currently identified in three listing notices contained in GN R544, 545 and 546 of 18 June 2010 which came into force on 2 August 2010.	Noted



		14.14	Section 24F of NEMA provides that notwithstanding any other Act, no person may,		
			inter alia, commence a listed activity unless the competent authority or the Minister		
			of Minerals and Energy, as the case may be, has granted an environmental		
			authorisation for the activity. The prospecting rights clearly contemplate that further		
			statutory approvals may be required including under NEMA and does not purport to		
			be an environmental authorisation for the purposes of NEMA.		
		14.15	Failure to obtain an environmental authorisation prior to commencing an activity is	-	
			an offence, as is any failure to comply with the conditions of such an environmental		
			authorisation, and is punishable by a penalty on conviction of up to R10 million or		
			to imprisonment for a period not exceeding 10 years, or to both such fine and such		
			imprisonment. Section 31L makes provision for the issuing of Compliance Notices in		
			instances, such as the present, where activities identified under NEMA have been		
			carried out without prior environmental authorisation and notwithstanding any		
			pending application for rectification in terms of section 24G of NEMA.		
		14.16	Where an activity has been undertaken without environmental authorisation, as in	-	
			the case of the unlawful road on the slopes of the Meletse mountains, section 24G		
			of NEMA offers a mechanism for the rectification of the unlawful commencement of		
			such an activity.		
11/04/2014	Werksmans Attorneys Justin Truter	14.17	Section 24G <sup>47</sup> of NEMA provides, <i>inter alia</i> , that, on application by a person <i>who</i>		Noted.
Letter	(on behalf of Calshelf	1 1.17	has committed an offence in terms of section 24F (read with section 49A), the MEC		TVOCOU.
Lotto.	Investments 172 (Pty)		concerned may direct the applicant to-		
	Ltd and Calshelf 173	14.17.1	compile a report containing-		
	(Pty) Ltd ("Calshelf")	1 1.17.1	(i) an assessment of the nature, extent, duration and significance of the		
	(1 ty) Eta ( Odiorion )		consequences for or impacts on the environment of the activity, including		
			the cumulative effects;		
			(ii) a description of mitigation measures undertaken or to be undertaken in		
			respect of the consequences for or impacts on the environment of the		
			activity;		
			(iii) a description of the public participation process followed during the		
			course of compiling the report, including all comments received from		
			interested and affected parties and an indication of how issues raised have		
			been addressed;		
			(iv) an environmental management programme; and		
		14.17.2	provide such other information or undertake such further studies as the		
		14.17.2	•		
		14.10	Minister or MEC, as the case may be, may deem necessary.	-	Consciplints were tooled to already wallest the immedia
		14.18	The section 24G report does not meet these statutory requirements and contains		Specialists were tasked to clearly reflect the impacts
			numerous material gaps in relation to, <i>inter alia</i> , the impact that blasting has had on		arising from activities associated with the unlawful road
			the ecosystem, the visual impact of the unlawful roads on the sense of place of the		construction. This Section 24G draft EIR has thus been
			area, the socio-economic impacts of the unlawful activities on tourism, game		revised to include impact assessments from the
			farming and the cultural and spiritual impacts of the unlawful activities on affected		specialist reports (refer to Section 4.2 for the impact
			communities. The EAP should be directed to address these gaps in information		assessment table). Refer also to Appendix F for copies
			before recirculating the report for public consideration and comment and re-		of all specialist reports.
			submitting the report to the MEC.		
		14.19	The MEC must consider any reports or information submitted and thereafter may-		Noted.
		14.19.1	direct the person to cease the activity, either wholly or in part, and to		
			rehabilitate the environment within such time and subject to such conditions		
			as the MEC may deem necessary; or		
		14.19.2	issue an environmental authorisation to such person subject to such conditions as the MEC may deem necessary.		
				1	

<sup>&</sup>lt;sup>47</sup> As it read at the time of the application by Aquila – it was subsequently amended in the National Environmental Management Laws Second Amendment Act, 2013 which came into force and effect on 18 December 2013.



11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty)	14.20 The offender must pay an administrative fine, which may not exceed R1 million <sup>48</sup> and which must be determined by the Department, before the MEC may determine whether to grant or refuse rectification by way of environmental authorisation.	Noted.
	Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	14.21 Considering the extent of the environmental degradation caused by Aquila, the sensitivity of the receiving and surrounding environment and significance of the area to various communities from a cultural heritage, spiritual and ancestral point of view, not to mention Aquila's flagrant disregard for at least 5 statutes including NEMA, the correct decision is for the MEC to direct Aquila to cease the activity and to rehabilitate the environment within such time and subject to such conditions as the MEC may deem necessary. The MEC or his department must issue a directive in terms of section 28(4) of NEMA in respect of Aquila's breach of the environmental duty of care, and a compliance notice in terms of section 31L of NEMA in respect of Aquila's failure to obtain prior environmental authorisation for its activities.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		14.22 A person who fails to comply with a directive to cease and rehabilitate is guilty of an offence and liable on conviction to a penalty of up to R10 million or to imprisonment for a period not exceeding 10 years, or to both such fine and such imprisonment.	Noted.
		14.23 Notwithstanding any section 24G NEMA application, the MEC may also refer an offence to the National Director of Public Prosecutions for criminal prosecution. We maintain that the manner and extent of the offences carried out by Aquila warrant that both Aquila and its directors in their personal capacities should be prosecuted.	
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	<ul> <li>The section 24G NEMA application acknowledges that the applicant unlawfully commenced with the following activities without environmental authorisation under NEMA:</li> <li>GNR 544 – activity 22: Listed Activity: The construction of a road, outside urban areas, with a reserve wider than 13,5 meters or, where no reserve exits where the road is wider than 8 meters;</li> <li>GNR544 - activity 47: Listed Activity: The widening of a road by more than 6 meters, or the lengthening of a road by more than 1 kilometre – With a reserve wider than 13,5 meters or, where no reserve exits where the road is wider than 8 meters;</li> <li>GNR 546: activity 4: Listed Activity: The construction of a road wider than 4 metres with a reserve less than 13, 5 metres in (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of the National Environmental Management: Protected Areas Act, 2003 ("NEMPAA") or from the core areas of a biosphere reserve.</li> <li>GNR 546: activity 19: Listed Activity: The widening of a road by more than 4 meters, or the lengthening of a road by more than 1 kilometer outside of urban areas.</li> </ul>	The application form in terms of the EIA Regulations, 2010 has been reviewed (in consultation with LEDET) and amended (submitted to LEDET on 12 June 2014). Refer to Appendix C1.
		14.25 We pause to point out that there are a number of other listed activities that were carried out unlawfully by Aquila which are not included in the Section 24G NEMA application and that the application cannot be considered in its present form and must be referred back to the EAP for amendment. Once the report has been amended it must be put out for further public participation and comment before being resubmitted to the department.	The application form in terms of the EIA Regulations, 2010 has been reviewed (in consultation with LEDET) and amended (submitted to LEDET on 12 June 2014). Refer to Appendix C1.
		<ul> <li>The following additional activities were undertaken by Aquila in the process of its unlawful clearing and road construction and must be included in the application for Section 24G rectification:</li> <li>14.26.1 GNR 544: activity 26: Listed Activity: Any process or activity identified in terms of Section 53(1) of the National Environmental Management: Biodiversity Act, 2004;</li> </ul>	There have been no regulations promulgated in terms of Section 53 of NEMBA referring to processes in listed ecosystems. Therefore this activity has not been included as part of the application.

<sup>&</sup>lt;sup>48</sup> The maximum fine amount has been increased to R5million under the National Environmental Management Laws Second Amendment Act, 2013 with effect from 18 December 2013. This will not apply to applications that were made in terms of section 24G of NEMA before this date, as in the case of Aquila.



		14.26.2 GNR546: activity 12: Listed Activity: The clearance of an area of 300m² or more of vegetation where 75% or more of the vegetation cover constitutes indigenous vegetation within any critically endangered or endangered ecosystem listed in terms of Section 52 of the NEMPAA or prior to the publication of such of list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004 or within critical biodiversity areas identified in bioregional plans.	The application form in terms of the EIA Regulations, 2010 has been reviewed (in consultation with LEDET) and amended (submitted to LEDET on 12 June 2014). Refer to Appendix C1
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	14.26.3 GNR546: activity 13: Listed Activity: the clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal or vegetation is required for, inter alia, the undertaking of linear activity falling below the thresholds mentioned in listing notes as 1 in terms of GNR544 of 18 June 2010. We pause to point out that the exclusion to this activity does not apply considering the road or linear activity is not below the threshold referred to.  14.26.4 Activity 13 applies in the following geographically sensitive areas:  14.26.4.1 Critical biodiversity areas and ecological support areas as identified in the Systematic Biodiversity Plans adopted by the competent authority. National protected area expansion strategies focus areas.  14.26.4.2 National protected area expansion strategies focus areas.  14.26.4.3 Outside urban areas, in areas including:  14.26.4.3.1 A protected area identified in terms of NEMPAA, including conservancies;  14.26.4.3.2 National protected area expansion strategy focus areas;  14.26.4.3.3 Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority;  14.26.4.3.4 Sites or areas identified in terms of an international convention;  14.26.4.3.5 Core areas in biosphere reserves;  Areas within 10km from national parks or world heritage sites or 5km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.  14.26.5 GNR546: activity 14: Listed Activity: The clearance of an area of 5 hectares or more vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for, inter alia, the undertaking of a linear activity falling below the thresholds in Notice 544 of 2010. We point out once again that the road does not fall below the thresholds and is therefore listed under activity 14 in all areas outs	The application form in terms of the EIA Regulations, 2010 has been reviewed (in consultation with LEDET) and amended (submitted to LEDET on 12 June 2014). Refer to Appendix C1.
		the section 24G NEMA application is a material and fundamental flaw which necessitates that the application be referred back to the EAP to address these additional activities, amend the report and re-circulate this for public consideration and comment before resubmitting it to the department for consideration. Having said that, and for the reasons expressed above, we are of the view that this will be a waste of time - there is enough evidence before the department on which to refuse the application already at this stage and direct Aquila to rehabilitate the damage it has caused to the environment.	
11/04/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	14.28 The lack of objectivity displayed by the EAP and the relevant sanctions:  14.28.1 It is noticeable that the EAP does not make any recommendation regarding whether, in her view, the MEC should grant or refuse the application for rectification, as she is required to do in terms of NEMA, read with the NEMA EIA Regulations. We submit that the reason for this is that the EAP is aware that she cannot possibly recommend the application for approval without compromising her professional integrity and independence.	Independence is defined in the EIA Regulations as meaning "that the EAP has no business, financial, personal or other interest in the activity, application or appeal in respect of which that EAP is appointed in terms of these Regulations other than fair remuneration for work performed in connection with that activity, application or appeal; or that there are no circumstances



		14.28.2	Considering the misrepresentations by the EAP contained in both the NEMA	that may compromise the objectivity of that EAP or
			section 24G application and the mining right application under the MPRDA, in	person in performing such work."
			relation to the length of the unlawful roads, the nature and extent of the impacts	porcon in performing each work.
			created by these roads and the alleged oversight by Aquila in constructing	Shangoni has no business, financial, personal or other
			these roads, it is apparent that the EAP has failed to meet the requirements,	interest in this activity other than the fair remuneration
			including the standard of independence required, under regulation 17 of NEMA.	for the work performed in connection with this activity.
		14.28.3	Regulation 17 of the NEMA EIA Regulations specifically provides for the	
		11.20.0	requirements for EAPs or a person compiling a specialist report or undertaking	Because of the fact that Shangoni has no interest in this
			a specialised process. It states that:	activity other than the fair remuneration for the work
			"An EAP or person compiling a specialist report or undertaking a specialised	done by it and the fact that payment for the work done
			process appointed in terms of <u>regulation 16</u> (1) must-	by Shangoni is not subject to a positive outcome of the
			a) be independent;	application, no circumstances exist that may
			b) have expertise in conducting environmental impact assessments,	compromise the objectivity of the EAP (as required per
			including knowledge of the Act, these Regulations and any guidelines that have relevance to the proposed activity;	the definition of "independence" set out above).
			c) perform the work relating to the application in an objective manner, even	Shangoni's objectivity and independence is confirmed
			if this results in views and findings that are not favourable to the	by it objectively describing the full extent of the
			applicant;	environmental degradation caused by the activities of
			d) comply with the Act, these Regulations and all other applicable	Aquila Steel in its Section 24 G draft EIR, even if these
			legislation;	results are not favourable to Aquila Steel.
			e) take into account, to the extent possible, the matters referred to in	results are not ravourable to Aquila Steel.
			regulation 8 <sup>49</sup> when preparing the application and any report relating to	Based on the facts stated above, Shangoni did indeed
			the application; and	act independent and objective at all times in this process
			f) disclose to the applicant and the competent authority all material	and therefore complies with all the requirements set out
			information in the possession of the EAP or person compiling a specialist	in regulation 17 of the EIA Regulations.
				In regulation 17 of the LIA Regulations.
			report or undertaking a specialised process that reasonably has or may	
			have the potential of influencing-	
			i. any decision to be taken with respect to the application by the	
			competent authority in terms of these Regulations; or	
			ii. the objectivity of any report, plan or document to be prepared by the EAP or person compiling a specialist report or undertaking a	
			specialised process in terms of these Regulations for submission	
			to the competent authority."	
11/04/2014 We	Verksmans Attorneys Justin Truter	14.29 (	On this basis, and for the reasons motivated in detail above, we submit that the EAP	Specialists were tasked to clearly reflect the impacts
	on behalf of Calshelf		has acted contrary to the requirements of regulation 17, failed to conduct the EIA	arising from activities associated with the unlawful road
,	nvestments 172 (Pty)		process in accordance with the NEMA requirements in that there has been a distinct	construction. This Section 24G draft EIR has thus been
	td and Calshelf 173		ack of proper consultation, material reports were not presented timeously to the	revised to include impact assessments from the
	Pty) Ltd ("Calshelf")		&APS for consideration and comment, and the EAP presented misleading and	specialist reports (refer to Section 4.2 for the impact
('	ty) Ltd ( Galerien )		ncomplete information to the Department. It is submitted that the information	assessment table). Refer also to Appendix F for copies
			contained in section 24G NEMA report and specialist studies is not adequate in order	of specialist reports.
			or the Department to arrive at an informed decision and that the application by Aquila	or openialist reports.
			nust be refused.	Documentation related to Public consultation is included
		· ·	100.50 1010000.	in in Section 6 and Appendix E.
		15 A sumr	nary of the appropriate remedies in the light of Aquila's conduct:	Your concerns are acknowledged and form part of this
			sufficient information and evidence before the department in respect of the	Section 24G EIR that will be submitted to LEDET.
			nt degradation of the environment that has been caused by Aquila and the flagrant	
		_	ul manner in which this has been caused, in contravention of at least 5 national laws	
			n material adverse impacts on a sensitive ecosystem and on various interested and	
			parties and communities. If ever there was a case which warranted the harshest	
			and civil sanctions against an environmental offender, this is it. The MEC must	
			ne application for rectification and issue a directive under section 28(4) of NEMA and	
			iance notice under section 31L of NEMA directing Aquila to rehabilitate the	
	I			

<sup>&</sup>lt;sup>49</sup> Regulation 8 refers to compliance with section 24 dealing with the criteria to be taken into account by competent authorities when considering applications.



			adjustical propagation with a martination who like the Direction of Venture and Co. 11.		
			criminal prosecution with a motivation why, like the <i>Blue Platinum Ventures</i> prosecution, this is a case in which the directors of Aquila should be prosecuted in their personal capacities.		
			16 Conclusion		
			The applicant has applied for rectification for the unlawful construction of roads along the		
			mountainside in terms of section 24G of NEMA. As noted above, there are fundamental flaws in the application which, together with Aquila's wilful and unlawful conduct and the		
			significant environmental degradation which they have caused through this, militates		
			strongly against any condonation or authorisation by the environmental authority. Instead,		
			the correct decision is to refuse environmental authorisation and direct the rehabilitation of the affected environment to its previous state as far as possible. Furthermore, the		
			environmental authority must refer Aquila and its directors to the NPA for criminal		
			prosecution.		
7 August 2014; 11	Umhlaba	A. Nicholson		Refer to response dates for	Noted
August 2014; 13	Environmental	E.B Nieuwoudt		specific letters received	
August 2014; 15 August 2014; and 17	Consulting cc (via Rooiberg Bewaria;	P. Mostert C. Engelbrecht-	farm Donkerpoort 448KQ and Randstephne 455KQ, Thabazimbi, Limpopo. The Limpopo Department of Economic Development, Environment and Tourism (LEDET) reference number for	(below)	
August 2014	Catwalk Investments	Greyling	the application is 12/1 /9-6/S24G/15-W1.		
	380 (Pty) Ltd; EB	F. Stow			
Letters	Shelf Investments 166 (Pty) Ltd; Monate		The feedback is based on reviewing the information provided on the Shangoni website during June 2014. Shangoni are Aquila's appointed independent environmental assessment practitioners (EAP).		
	Private Game		I have reviewed the following documents in detail;		
	Reserve; SARPHC		The Section 24G Technical Report updated and completed in June 2014		
	Properties (Pty) Ltd; Meletse Game		The Section 24G Draft Environmental Management Programme completed in June 2014		
	Reserve)		Overall I have noted that Shangoni have (on behalf of Aquila) compiled documentation which		
	·		recognises the pristine biophysical and cultural environment which has been irrevocably disturbed		
			by construction of the 33km of illegal roads.		Nataral
			At last, after court proceedings and years of raising concerns, it is clear that Aquila have taken cognisance of feedback provided from interested and affected parties (I&AP's). The reports now		Noted
			fairly reflect the significant nature of the illegal activities implemented.		
			It should be stressed that should Aquila have taken responsibility for their illegal activities when it was first raised in writing by interested and affected parties in 2011 the extent of the impact would		
			have been far less and more effort could have been made by now to rehabilitate.		
			The on-going denial by Aquila of the illegal activities up to this point has significantly worsened both		
			the extent and significance of the impacts resulting from the illegal roads.		



## The Section 24G, Technical Report updated and completed in June 2014

This document now provides;

- A clear description of the extent of the illegal activities.
- A detailed description of the baseline environment.
- An impact assessment which fairly represents the significance of the impacts associated with the illegal roads.
- A suite of proposed management measures.
- Detailed response to the majority of concerns raised by I&AP's.

Based on my original feedback to Shangoni, the following issues have yet to be addressed;

- Explanation of the road construction activities taking place prior to September 2007 as noted on historical google earth images.
- A rehabilitation plan linked to timelines of when roads will be rehabilitated.

The Section 24G, Environmental Management Programme completed in June 2014

A summary of the most pertinent commitments made in the environmental management programme includes;

- Installation of culverts under the drainage lines which have being crossed.
- Commitments to monitor and manage erosion.
- Monthly surface water monitoring programme.
- The implementation of rehabilitation activities under the guidance of an expert.
- By inference, the appointment of an environmental control officer.
- Declaration of Madimatle as a heritage site.
- Implementation of appropriate environmental awareness training
- Removal and rehabilitation of roads close to drainage lines (although no specifics concerning amount of rehabilitation).
- Fire management plan
- Removal of alien vegetation according to a management plan
- Appointment of a rehabilitation specialist to develop a rehabilitation plan

Noted

In an attempt to address the previous concern regarding activities prior to September 2007, a map was compiled (refer to Figure 2), depicting existing farm roads on the property prior to commencement of the prospecting activities. Shangoni confirmed this information with Aquila and was informed that this information is correct.

Your concern is acknowledged, however, there are constraints with respect to detailing timelines and strategies without a final decision made by LEDET.

As a mining right application has been lodged by Aquila Steel for proposed mining to take place on the properties on which prospecting activities (and the associated unlawful road construction) have occurred, this may influence the rectification measures and applicable timeline associated therewith.

During an Authorities meeting held with LEDET on 05 August 2014, a request was made by LEDET to assess the extent to which the existing roads can be utilised for the proposed mining activities (should an authorisation be issued). The purpose of this is to prevent unnecessary road construction (and related impacts) on the site, should the application for a mining right be granted. This information will be provided as part of the draft EIR for the proposed Meletse Iron Ore Project.

Confirmed. Please note that the commitment included in the list as the "declaration of Madimatle as a heritage site" is a proposed mitigation measure pointed out by the Anthropologist as per requests made by the groups with religious interest.



Appointment of a appointing to investigate ways to repeate list indicates a contaction	
<ul> <li>Appointment of a specialist to investigate ways to re-establish indigenous vegetation</li> <li>Develop post rehabilitation monitoring</li> </ul>	
Additional concerns / recommendations; The following main issues are outstanding and should be addressed;  Although the documentation includes a commitment for the development of a rehabilitation plan, the plan is yet to be completed. Delive the rehabilitation plan should form part of the documentation for submission to the authorities.  There should be firm commitment linked to timeframes committing to; a. The actual completion of the rehabilitation plan by an appropriate specialist. Interested and affected parties should be afforded the opportunity to provide comment on this plan. b. The extent of roads to be rehabilitated on an annual basis until such time all the illegal roads have been rehabilitated.  Based on historical experience, Aquila has not always maintained their word and commitments and hence in addition to the appointment of an Environmental Control Officer, I would request Aquila to establish a community forum that could forms an oversight role in ensuring that rehabilitation actually takes place.  In light of the above, it would be prudent that Aquila provide the full R 5.92 million guarantee for the rehabilitation of the roads based on the budget indicated within the report (32.89 km x R150 per linear meter for rehabilitation and R 30 per linear meter for maintenance).	Your concern is acknowledged, however, there are constraints with respect to detailing timelines and strategies for rehabilitation without a final decision made by LEDET.  As a mining right application has been lodged by Aquila Steel for proposed mining to take place on the properties on which prospecting activities (and the associated unlawful road construction) have occurred, this may influence the rectification measures and applicable timeline associated therewith.  During an Authorities meeting held with LEDET on 05 August 2014, a request was made by LEDET to assess the extent to which the existing roads can be utilised for the proposed mining activities (should an authorisation be issued). The purpose of this is to prevent unnecessary road construction (and related impacts) on the site, sould mining be permitted. This information will be provided as part of the draft EIR for the proposed Meletse Iron Ore Project.  In the event that the application for a mining right and environmental authorisation for the proposed Meletse Iron Ore Project are not successful, the development of a detailed rehabilitation plan will commence immediately.  In the development, approval and implementation of such a rehabilitation plan will commence immediately.  In the development, approval and implementation of such a rehabilitation plan, the following additional measures and communication are recommended, which are included within this Section 24G EIR:  Detailed specialist inputs as reflected in the mitigation measures;  Public consultation to ensure concerns from IAPs are adequately incorporated in both the technical design and implementation of such rehabilitation plan;  Submission of the rehabilitation plan to LEDET for approval (prior to implementation), including detailed rehabilitation budget linked to the implemention timeline and proof of the financial instrument applied to secure the funds;  Bi-annual rehabilitation progress reports to be submitted annually to the LEDET for a period as proposed by the rehabilitation sp



				<ul> <li>Rehabilitation progress reports and post-rehabilitation monitoring to be undertaken by an independent specialist;</li> <li>Feedback to IAPs on progress with regards to rehabilitation (e.g. copies of above reports); and</li> <li>Any other conditions that may be imposed by LEDET.</li> </ul>
		The documentation completed by Shangoni highlight the severity of the impacts caused by the illegal roads constructed by Aquila. I would like to implore the Government Authorities to ensure that they make an example that blatant disregard of our environment is unacceptable and impose not only a fine but institute criminal proceedings against the relevant directors of Aquila.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
Catwalk Investments 380 (Pty) Ltd; EB Shelf Investments 166 (Pty) Ltd	E.B. Nieuwoudt	I am representing Catwalk Investments 380 (Pty) Ltd that owns the Remaining Extent of Portion 2 and Portion 29 (a Portion of Portion 2) of the farm Buffelshoek 446KQ, and EB Shelf Investments 166 (Pty) Ltd that owns the Remaining Extent of the farm Rebelsig 611 KQ. I am directly affected by the illegal roads constructed as part of th prospecting activities that have taken place by Aquila Steel (S Africa) (Pty) Ltd for their Meletse Iron Ore Project. As I am bordering the affected properties, it directly affects me, also visually.	18/08/2014	Noted. Refer to responses to the Umlhaba Environmental Consulting CC letter above.
		As part of Rooiberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC.  At long last from the documentation available, it is clear that Aquila and Shangoni now more accurately reflect the huge damage that was illegally done to the environment. We went to great pains to repeatedly report this to Aquila and Shangoni (and the representatives before them) in Public meetings and feedback provided over a long period of time. It was also reported to the relevant authorities as long back as 2011. Aquila has always told us that they have not done anything illegally and their legal representatives, Webber Wentzel, boldly declared in 2011 that "In particular our client is not acting unlawfully in relation to the construction of a road on the farm		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		We urge the authorities again to take the strongest possible action against this blatant disregard for the environment and the laws of the country, and now admitting to it. Aquila should be allowed to damage the environment for ever, and then just apologising for it. We also expect Aquila to rehabilitate the illegal roads to their pre-disturbed state.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to responses as per the Umhlaba Environmental Consulting CC letter above.
Monate Private Game Reserve	C Engelbrecht- Greyling	As one of 40 owners of the farm Wynek 505 KQ, t/a Monate Private Game Reserve, Rooiberg, we are directly affected by the illegal roads constructed as part of prospecting activities that have been taken place by Aquila Steel (S Africa) (Pty) Ltd for their Meletse Iron Ore Project.  As part of Rooiberg Bewaria, we concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC.	14/08/2014	Noted. Refer to responses to the Umlhaba Environmental Consulting CC letter above.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		The outcome of this process should be action taken by Aquila to rehabilitate the illegal roads to their pre-disturbed state.		
	380 (Pty) Ltd; EB Shelf Investments 166 (Pty) Ltd  Monate Private Game	380 (Pty) Ltd; EB Shelf Investments 166 (Pty) Ltd  Monate Private Game C Engelbrecht-	illegal roads constructed by Aquila. I would like to implore the Government Authorities to ensure that they make an example that blatant disregard of our environment is unacceptable and impose not only a fine but institute criminal proceedings against the relevant directors of Aquila.  E.B. Nieuwouldt  I am representing Catwalk Investments 380 (Pty) Ltd that owns the Remaining Extent of Portion 2 and Portion 29 (a Portion of Portion 2) of the farm Buffelshoek 446KO, and EB Shelf Investments 166 (Pty) Ltd  I am representing Catwalk Investments 380 (Pty) Ltd that owns the Remaining Extent of the farm Buffelshoek 446KO, and EB Shelf Investments 166 (Pty) Ltd  I am representing Catwalk Investments 380 (Pty) Ltd that owns the Remaining Extent of the farm Buffelshoek 446KO, and EB Shelf Investments 166 (Pty) Ltd for their Meletse Iron Ore Project. As I am bordering the affected by the illegal roads constructed as part of th prospecting activities that have taken place by Aquila Steel (S Africa) (Pty) Ltd for their Meletse Iron Ore Project. As I am bordering the affected properties, it directly affects me, also visually.  As part of Rooiberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC.  At long last from the documentation available, it is clear that Aquila and Shangoni now more accurately reflect the huge damage that was illegally done to the environment. We went to great pains to repeatedly report this to Aquila and Shangoni (and the representatives before them) in Public meetings and feedback provided over a long period of time. It was also reported to the relevant authorities as long backs as 2011. Aquila has always told us that they have not done anything illegally and their legal representatives, Webber Wentzel, boldly declared in 2011 that "In particular our client is not acting unlawfully in relation to the construction of a road on the farm Randstephne"  We urge the authorities again to take the strongest poss	The documentation completed by Shangoni highlight the severity of the impacts caused by the illegal roads constructed by Aquila. I would like to implore the Government Authorities to ensure that they make an example that blatant disregard of our environment is unacceptable and impose not only a fine but institute criminal proceedings against the relevant directors of Aquila.  Catwalk Investments 380 (Pty) Ltd; EB Shell Investments 380 (Pty) Ltd that owns the Remaining Extent of Portion 2 and Portion 29 (a Portion of Portion 2) of the farm Buffelshoek 448KQ, and EB Shell Investments 166 (Pty) Ltd that owns the Remaining Extent of the farm Rebelsig 611 KQ, I am directly affected by the illegal roads constructed as part of th prospecting activities that have taken place by Aquila Stee (S Africa) (Pty) Ltd for their Meletse Iron Ore Project. As I am bordering the affected properties, it directly affects me, also visually.  As part of Roolberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC.  At long last from the documentation available, it is clear that Aquila and Shangoni now more accurately reflect the huge damage that was illegally done to the environment. We went to great pains to repeatedly report this to Aquila and Shangoni (and the representatives before them) in Public meetings and feedback provided over a long period of time. It was also reported to the relevant authorities as long back as 2011. Aquila has always told us that they have not done anything illegally and their legal representatives. Webber Wentzel, boddy declared in 2011 that 'in particular our client is not acting unlawfully in relation to the construction of a road on the farm Randstephen"  We urge the authorities again to take the strongest possible action against this blatant disregard for the environment and the laws of the country, and now admitting to it. Aquila should be allowed to damage the environment of over, and then just apploigisin



		In addition to the concerns raised by Umhlaba, I would like to draw your attention to my specific concerns which I do not feel are adequately addressed;  1) My letter of March 2014 refers.  2) There is no and has been no indication from any authoritative sector that any of the concerns of IAP's have been noted and whether any such will or would be taken into consideration when considering any application regarding this whole project.  3) I remain fearful that if no action is taken to hold Aquila Steel (S Africa) (Pty) Ltd. to account, any future operations of similar nature will have the same if not worse consequences.  I am still of the belief that it is imperative that LEDET, DMR and all responsible parties take action before it is too late.  The outcome of this process should be action taken by Aquila to rehabilitate the illegal roads to their	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to response provided on the letter received from Umhlaba Environmental Conculting CC (above).
17 August 2014	Meletse Game F. Stow Reserve; SARPHC Properties (Pty) Ltd	As the General Manager of Meletse Game Reserve, I am directly affected by the illegal roads constructed as part of the prospecting activities that have taken place by Aquila Steel (S Africa) (Pty)  Ltd for their Meletse Iron Ore Project.	Noted. Refer to responses to the Umlhaba Environmental Consulting CC letter above.  Your concerns are acknowledged and form part of this
		As part of Rooiberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC.  In addition to the concerns raised by Umhlaba, I would like to draw your attention to my specific concerns which I do not feel are adequately addressed, have direct bearing on Aquila Steel's apparent lack of environmental and social accountability throughout the process;  One of the potentially most serious violations in this entire regrettable process is the fact that Aquila, in my opinion, knowingly under-engaged the local religeous and farmworker communities, thus ensuring they were under-informed about Aquila's intentions and actions on the land, and for whom desecration and blasting near the Madimatle Cave site is a very serious taboo. In my opinion, they were aware that any attempt to engage openly and seriously, would have been met with strong, politically unpalatable resistance.  Aquila would/should have been aware that this is a vulnerable community by virtue of it's historically disadvantaged background, lack of legal recourse, poor access to media, isolated living conditions and poor organisational capacity.  Based on this understanding Aquila, most likely knowingly and deliberately, exploited this community by purposefully not engaging it effectively, all while knowingly carrying out its now admitted unlawful acts. This then simply adds to the woeful historical litany of social exploitation by financially powerful, but irresponsible mining companies, which has resulted in very serious high-profile social consequences in other parts of the country.  Furthermore, when serious environmental transgressions were clearly pointed out by surrounding land owners, with better knowledge of their intentions, it was treated with outright distain by Aquila, eventually ending up in unnecessary and costly litigation.  These actions, by a company with such righteously self-proclaimed environmental credentials, can only lead one to speculate that; either	Section 24G EIR that will be submitted to LEDET.



		Had any of these transgressions been addressed seriously and timeously, rehabilitation would have been relatively straight forward. As it now transpires, it is my opinion that the damage is permanent.		
		I thus insist that a detailed, updated, independent rehabilitation assessment is carried out on the road damage, by a mutually acceptable and well experienced service provider, in order to gain a better understanding of the true financial cost of COMPLETE rehabilitation, and that the process is initiated without undue delay.		Refer to response provided on the letter received from Umhlaba Environmental Conculting CC (above).
		It is also my sincere wish that LEDET now carries out its very clear public mandate, as official custodians of the Limpopo natural environment, to not only deny the application, but follow it up with a serious investigation into potential illegalities by Aquila personnel and/or directors.		Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	We refer to the above matter and to our previous objection letter dated 11 April 2014. We ask that our previous letter be read with this letter as various concerns which are dealt with in that letter have not been addressed.	19/08/2014	Noted. Previous comments received from Werksmans Attorneys have been included in the draft version of this Section 24G EIR and have been kept in this table (above) of this Final Section 24G EIR.
		We confirm that we act for Calshelf Investments 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf"), represented by Mr Cosmos Cavaleros ("our clients"). Kindly note that we no longer act for the Rooiberg Bewaria and its members, who remain interested and affected parties and represent themselves in this matter.		Noted.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	As we have recorded previously, Calshelf are the owners of land adjacent to the area on which Aquila Steel (South Africa) Pty Ltd ("Aquila") have undertaken various unlawful activities that have resulted in significant environmental degradation. Calshelf utilises its land as a private game reserve, as do many of the surrounding land owners.		Noted.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	AMPLIFICATION OF PREVIOUS GROUNDS OF OBJECTION: The culpability of Aquila and its directors and the appropriate sanctions/remedies:  4 Although the EAP has now acknowledged certain of the gaps in information that were identified in our previous letter and has addressed these in the amended report, which also reflects the significance and severity of Aquila's unlawful activities and the impacts of these activities more accurately, many of the concerns identified in our previous letter have not been adequately addressed and responded to, and, in certain circumstances, are not responded to at all. In certain respects the EAP states simply in the "Comments and Responses" table that "Your concerns are acknowledged and form part of this Section 24G EIR that has been submitted to LEDET." We submit that this is not an adequate response and fails to engage	19/08/2014	Due to the extensive content as provided in this Section 24G EIR (also incorporating the concerns as raised by IAPs within this content), it is very difficult to respond to those concerns within this comments table. Each of the raised concerns was analysed in extensive detail and taken into consideration in the various sections of the Section 24G EIR. Please provide us with specific concerns that in your opinion have not been adequately addressed.
		with the comments adequately.  In any event, the statement is incorrect in that the amended section 24G report does not include reference to certain of the comments at all – for instance, the EAP does not refer anywhere in the report to the fact that Aquila's activities were also in contravention of its prospecting rights. We submit that it is incumbent on the EAP to point this out to the environmental authority as it		Shangoni has considered your statement as per the previous letter received. The allegations regarding Aquila Steel not abiding to the prospecting right is included as a comment and is therefore communicated to LEDET as per this Comments and Response table.



		renders Aquila's explanation for its unlawful activities under NEMA totally implausible. The culpability of Aquila and its directors is a relevant factor which the environmental authority must have regard to in deciding whether to grant or refuse the section 24G authorisation.	
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	For the reasons expressed in our previous letter, and on the further grounds expressed below, our clients remain firmly of the view that the application for the ex post facto rectification of unlawful commencement with certain activities identified under the National Environmental Management Act, 1998 ("NEMA"), which has resulted in environmental degradation as significant as that caused by Aquila, should never be condoned or countenanced. Our client maintains that Aquila's directors carried out the activities wilfully and in flagrant disregard of at least five of our country's laws, including NEMA. There is nothing in the amended report to dispel this view and the EAP's explanation for Aquila's unlawful conduct remains entirely implausible.	Noted.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The amended section 24G report now confirms our client's concerns that Aquila has continued with its unlawful road construction, which included illegal blasting and the destruction of protected tree species, until as recently as January 2014. The amended report records blasting events during the following months: Nov 2007; Nov 2008; Dec 2008; Jun 2010; Sep 2010; Nov 2010; Mar 2011; Apr 2011; May 2011; Jun 2011; Sep 2011. A total of 12 blasts (7 of these associated with road construction and a further 5 to release drill rods that were stuck). Again it is pointed out that the section 24G report fails to record that Aquila's prospecting right and EMP prohibited blasting.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	7 The report has been amended to include a more accurate indication of the extent of the unlawful roads that were constructed – where previously the report referred to 27 km of roads, this has now been corrected to 33km.	The purpose of the IAP process is to ensure that not only are the views and concerns of IAPs recorded, but to further investigate such concerns for relevance and significance to the application.  Your comments provided on the draft Section 24G EIR have provided significant value to the process.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Most alarming is that these activities were continued without any intervention or sanction from the relevant authority, the Limpopo Department of Economic Development, Environment and Tourism ("LEDET"). We have addressed correspondence to the national Department of Environmental Affairs ("DEA") calling for their urgent intervention on the basis of LEDET's lack of action. Considering the manner in which Aquila and its directors have conducted themselves, and the environmental, socio-economic, cultural heritage (including spiritual) significance of the Meletse mountain, the inaction by LEDET is a gross dereliction of duty and we would again call on LEDET's enforcement directorate to take urgent steps under sections 28(4) and 31L of NEMA and to refer this matter to the National Directorate of Public Prosecutions for prosecution.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The inaction by LEDET is all the more alarming as Aquila now relies on their inaction to justify their continuation with unlawful activities between 2007 and 2014. Aquila's defence is as follows: they applied for rectification under Section 24G on 5 February 2008, that section 24G does not automatically require the cessation of unlawful activities unless the Minister of his delegate directs this, that the delegated authority (LEDET) took no steps to stop Aquila and therefore that they could continue with the unlawful road clearing with impunity.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The scope for abuse if such an interpretation were correct (which it patently is not) is obvious  – the offender could submit a section 24G application without any intention of pursuing this further (Aquila's application was submitted in 2008 and they took no further steps to progress the application, which prompted the LEDET, 5 years later in their letter dated 7 August 2013 to note that no further information had been submitted and to call for a new application) and then rely on the inaction of the authority to justify its continuation with unlawful conduct. Aquila's interpretation loses sight of the following facts:	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	10.1 The activities for which rectification under section 24G was sought in 2008 were the roads that had been unlawfully cleared up to that point. Any further activities after that date were not covered by the 2008 application and, even on their own, flawed interpretation Aquila cannot rely on the submission of its 2008 section 24G application to support the unlawful road construction that happened after 2008. The same rationale would apply to the roads that were unlawfully cleared after submission of the current section 24G NEMA application – the EAP concedes that unlawful road clearing continued in January 2014 – many months after submission of the current section 24G NEMA application.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	10.2 The continuation with the unlawful activities even after Aquila's directors became aware of the illegality of their activities in 2008 (on their own version, which our clients' dispute), has culminated in a situation where, as confirmed in the previous and amended section 24G NEMA report, the environmental degradation is no longer capable of rehabilitation or adequate mitigation in many respects including in respect of the destruction to important ecological corridors. Had the unlawful activities ceased in 2008, there would still have been scope for mitigation and rehabilitation.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	We submit that Aquila's conduct was calculated to present the environmental authority with a fait accompli. The purpose of requiring authorisation for activities that are potentially harmful to the environment includes ensuring that impacts are assessed, avoided or mitigated before these activities are undertaken. The authorisation also sets conditions that stipulate how these activities must be undertaken, and contraventions of those conditions are criminal offences.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	If Aquila's interpretation relating to section 24G is correct (which we maintain it is not) this effectively creates a perverse incentive to break the law, is open to abuse, is a disincentive to compliance and undermines good environmental governance. This is apparent in the cavalier manner in which Aquila continued to flout the law until as recently as January 2014 and must be a factor which militates strongly against ex post facto authorisation under section 24G of NEMA and will be viewed as an aggravating circumstance in any prosecution.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Considering the severity of the impacts caused by Aquila's unlawful conduct and their directors' flagrant disregard for our country's laws (Aquila's road construction was in contravention of at least 5 laws, described in detail in our previous letter) we submit that the criminal prosecution of Aquila and its directors should run its course before the section 24G NEMA application is determined, as provided for in sections 24G (6) and (7) of NEMA.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	14 Section 24G(6) of NEMA provides as follows:  "The submission of an application in terms of sub-section 1 or the granting of an environmental authorisation in terms of sub-section 2(b) shall in no way derogate from —  (a) The environmental management inspectors or the South African Police Services Authority to investigate any transgressing in terms of this Act or any specific Environmental Management Act;  (b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."	Noted.



18/08/2014	Werksmans Attorneys Justin Truter	15 Subsection 7 provides as follows:	Noted.
Letter	(on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173	"If, at any stage after the submission of an application in terms of sub-section 1, it comes to attention of the Minister, Minister for Mineral Resources or MEC, that the applicant is under criminal	Noted.
	(Pty) Ltd ("Calshelf")	investigation for the contravention of or failure to comply with section 24F(1) or section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No 59 of 2008), the Minister, Minister responsible for mineral resources or MEC made a further decision to issue an environmental authorisation until such time that the investigation is concluded and —  (a) The National Prosecuting Authority has decided not to institute prosecution in respect of such contravention or failure;	
		(b) The applicant concerned is acquitted or found not guilty of the prosecution in respect of such contravention or failure has been instituted, or	
		(c) The applicant concerned has been convicted by a court of law of an offence in respect of such contravention or failure and the applicant has in respect of the conviction exhausted all the recognised legal proceedings pertaining to appeal or review."	
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	We maintain that this is a matter which is crying out for criminal prosecution of Aquila and its directors. In the matter of State v Blue Platinum Ventures (Pty) Ltd and Matome Samuel Maponya, the court sentenced the MD, Mr Maponya to 5 years imprisonment suspended for 5 years on condition that the affected environment was rehabilitated to the tune of some R7 million within 3 months. There are considerably more aggravating factors in the present case to warrant an even more severe sentence.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	17 We would furthermore call on LEDET to invoke the provisions of section 24N(8) of NEMA which provides as follows:  "Notwithstanding the Companies Act, 2008 (Act No. 71 of 2008), or the Close Corporations Act, 1984 (Act No. 69 of 1984), the directors of a company or members of a close corporation are jointly and severally liable for any negative impact on the environment, whether advertently or inadvertently caused by the company or close corporation which they represent, including damage, degradation or pollution."	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	As we have stated, the amended report still fails to draw the authority's attention to the fact that Aquila's unlawful activities were in contravention of its prospecting rights, which gives the lie to the explanation provided by the EAP for Aquila's unlawful activities – "Aquila Steel indicated that on commencement of these unlawful activities, the company was not aware that it should have complied with other environmental legislative requirements as the applicant had already obtained authorisation from the Department of Mineral Resources".	Shangoni has considered your statement as per the previous letter received. The allegations regarding Aquila Steel not abiding to the prospecting right is included as a comment as is therefore communicated to the LEDET as per this Comments and Response table.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The "authorisation" referred to are the prospecting rights granted under the MPRDA. These prospecting rights did not, however, authorise the activities carried out by Aquila which were in fact also in direct contravention of these prospecting rights (and the Prospecting Works Programme and Environmental Management Programme ("EMP") attached to these rights (refer to paragraph C2.15 of the EMP), in the following manner:	



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	19.1 The prospecting rights permitted the construction of 1.6km – 3km of road in order to access ten drilling sites whereas Aquila constructed in excess of 33km of roads and cleared 200 drilling sites for the purposes of prospecting. These unlawful activities commenced in September 2007 and continued even after the section 24G NEMA application had been submitted, until as recently as January 2014.	As responded to with regards to comments received on the previous draft version of the Section 24G EIR, the activities triggered in terms of the EIA Regulations, 2010 and included in this Section 24G EIR, have been elaborated upon in terms of the surface area associated with the prospecting roads. The surface area reflected within the Section 24G EIR includes surface disturbance associated with both road construction as well as areas cleared for drilling of prospecting boreholes. Refer to Section 2 in this Section 24G EIR for a description of activities as undertaken.  Geographic Information System (GIS) calculations were done and in total 32.89km of roads are present on-site (refer to Figure 7, Figure 8 and Figure 9). This includes 19.29km of constructed prospecting roads (in use); 1.95km of prospecting roads constructed (rehabilitated) and 11.65km of existing farm roads (widened). A total of 32.89km of roads form part of the Section 24G Rectification Application process, with a total surface disturbance of 33ha as cleared for the construction of roads and borehole sites.  Refer also to Figure 2 of this Section 24G EIR titled: "Map illustrating the gravel roads on the contravened site.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	19.2 The unlawful clearing and road construction involved extensive bulldozing and destruction of various protected tree species which was in further violation of Aquila's prospecting right and EMP (refer to paragraph C2.16 of the EMP), let alone in violation of NEMA and at least 5 other laws. The unlawful road construction also involved extensive blasting and removal of topsoil, again contrary to Aquila's own prospecting rights and Prospecting Works Programme and Environmental Management Programme (refer to paragraphs C6.3 and C6.4 which prohibit blasting and C6.6.1 which prohibits the removal of topsoil).	Impacts associated with the clearing of an area for the construction of the roads and blasting activities are described in Section 4.2 of this Section 24G EIR. This Section 24G will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	19.3 Aquila's contention that its unlawful activities were an oversight and were based on an assumption that their prospecting rights permitted such activities, also conveniently ignores the provisions contained in the Prospecting EMP which expressly state (in paragraph A6) that "Compliance with the provisions of the (MPRDA) and its Regulations does not necessarily guarantee that the applicant is in compliance with other Regulations and legislation. Other legislation that may be immediately applicable includes, but are (sic) not limited to: the National Environmental Management Act, 1998 and the National Water Act, 1998"	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	19.4 In paragraph E of the prospecting EMP, a Mr J.L Van Deventer on behalf of Aquila declares under oath that the information furnished in the EMP is "true, complete and correct", undertakes to implement the measures contained in the EMP and records that he understands that the undertaking is legally binding and that failure to give effect to the undertaking will render him liable to prosecution in terms of sections 98(b) and 99(1)(g) of the MPRDA. As we have stated, Aquila has acted in flagrant violation of its prospecting rights and prospecting EMP, with significant adverse impacts on the environment and on various parties rights and interests and Mr Van Deventer (and the directors of Aquila) are liable for prosecution.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Applicant's response:  "Aquila submitted an amended EMP in 2011.  Furthermore, annual progress reports were provided to the DMR, which contain specific information regarding the activities that were being conducted as part of the prospecting activities."



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	20 We submit that it is incumbent on the EAP to bring these facts to the attention of the environmental authority and yet the amended report fails to do so.	The EAP has previously, as well as part of this Final Section 24G EIR, included these comments made by Werksmans Attorneys in this report, which has been circulated for public comment.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Aquila's contentions are also implausible considering that numerous interested and affected parties, including our clients, have repeatedly brought the unlawful clearing, road construction and blasting activities to both Aquila and the relevant environmental and mineral authority's attention between 2007, when the unlawful activities commenced, and January 2014, when they finally ceased.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Considering the fact that Aquila is a subsidiary of an Australian listed mining company operating in a foreign country it is all the more implausible that they would not have ensured that they obtained expert advice on the need for environmental authorisation (and various other statutory approvals) prior to continuing with their unlawful clearing and road construction in such a sensitive environment.	Applicant's response:  "Aquila has utilised local environmental companies to compile the documents and to assist with the Section 24G application as far back as 2006 and 2008 and where they identified issues it was acted upon."
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Aquila has had teams of specialist consultants, including lawyers, employed as advisors since the outset of the application processes and it is extremely doubtful that not one of these advisors would have raised the need or at least the possibility that prior environmental authorisation was required. Simply put Aquila's contention that its illegal clearing and road construction activities came about as a result of ignorance and an oversight is a bald lie. The amended section 24G NEMA application confirms that Aquila continued with their illegal road clearing activities even after they became aware that this was illegal for want of environmental authorisation (amongst other statutory approvals) until as recently as January 2014.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Our clients maintain that the true reason for the Aquila's unlawful conduct is that they were under pressure to conduct their prospecting activities and, in the knowledge that it may take at least six months to a year before environmental authorisation could be granted for the clearing of sensitive vegetation, removal of protected tress and construction or expansion of the road, they wilfully elected to continue unlawfully without the requisite approvals. Having caused extensive and significant environmental damage, in wilful contravention of NEMA, the MPRDA, the National Forests Act, 1998 ("NFA"), the National Water Act, 1998 ("NWA"), the National Environmental Management: Protected Areas Act, 2003 ("NEMPAA"), the National Environmental Management: Biodiversity Act,2004 ("NEMBA") and the National Heritage Resources Act, 1999 ("NHRA"), and with cavalier disregard for sections 15 and 31 of the Constitution of the Republic of South Africa, 1996 ("the Constitution"), Aquila now audaciously seeks to have its unlawful activities regularised through an ex post facto application for environmental authorisation in which it presents the road as a fait accompli and its company as an innocent and ignorant party. Furthermore, Aquila has had the benefit of this unlawful road and the 200 drill sites that were unlawfully cleared during its prospecting phase and is reliant on the unlawful road as an essential component of its proposed mining activities for which a mining right application is currently pending before the mineral authority.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to Section 4.2 of this Section 24G EIR where environmental impacts associated with the unlawful road construction activities are assessed.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	There is nothing in the amended report that dispels these views which are very pertinent to the consideration and determination of the section 24G NEMA application by the environmental authority. Once again our clients would call on the relevant environmental, mineral, water and heritage authorities to each invoke the strictest criminal and civil sanctions under the laws that they administer.	These views of Interested and Affected Parties have been included in the previous version (draft) of the Section 24G EIR and have also been included in this section of this Section 24G EIR.  Your concerns are acknowledged and form part of this



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Had Aquila complied with the requirements of the environmental laws and planning and implementing their activities, the environmental and social costs could have been avoided or prevented, or minimized and – where appropriate – off-set or compensated timeously. Moreover, robust monitoring and adaptive management requirements could have further reduced harm.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Inadequate stakeholder and public participation:  Our clients also maintain that the level of notification and engagement with the relevant Heritage Resources Authority under the NHRA (the South African Heritage Resources Agency – "SAHRA") has been entirely inadequate particularly considering the cultural heritage (which includes spiritual) significance of the Meletse mountain. The amended section 24G NEMA report records the high impact on cultural heritage and also notes that prospecting roads have passed through certain sites of cultural heritage significance.	SAHRA has been informed with regards to the prospecting and related activities. (Refer to Appendix E3). Furthermore, the relevant specialist study reports have been loaded on the SAHRIS website.  The heritage impact assessment report is attached in Appendix F4. Refer also to the impacts described in Section 4.2 of this Section 24G EIR.  Furthermore, an Anthropologist was appointed on the 17th of March 2014, who consulted directly with the traditional healers. The specialist report is attached in Appendix F16.  Shangoni is currently engaging in further discussions with SAHRA with regards to the Heritage Impact
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The amended report records that, from a cultural heritage point of view, the site is important in both its tangible and intangible dimensions and that the disturbance as far as its immediate physical environment is concerned is a serious breach in terms of its religious and ritual meaning, integrity and relations with its traditional custodians as well as the public.	Palaeontological and Anthropological Assessments.  Noted.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	29 As far as the degree to which this impact can be reversed is concerned, the amended report records that the physical impact on the area around Madimatle is "irreversible" and that Aquila has lost its "social licence" to continue its activities as a result of its breach of the affected communities trust.  30 Under "Proposed mitigation" the amended report records, inter alia, that:  "The first important step is to declare the Madimatle site a provincial or national heritage site. The site is at least of provincial importance in this case the Limpopo Province. It is anticipated that the declaration of Madimatle as heritage site would be to the best interest of the traditional healer community and other heritage stakeholders, local government and any development action such as mining."	Please note that the commitment included in the list at the "declaration of Madimatle as a heritage site" is a proposed mitigation measure pointed out by the Anthropologist as per requests made by the groups with religious interest.



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	We submit, for reasons expressed previously and elaborated on below, that the entire Meletse mountain is of Grade 1 significance and that Aquila's unlawful activities have had a significant adverse effect on this heritage resource. The amended report records that the impacts of Aquila's unlawful activities cannot be rehabilitated or mitigated in many respects, including in certain cultural heritage respects. Again this is a factor which militates against the approval of the section 24G NEMA application.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	32 Our clients have appointed their own independent, specialist heritage consultant who confirms that the Meleste mountain or "Madimatle" is deserving of Grade I (national) heritage status.	Noted.  Any additional information may be sent to Shangoni Management Services and / or LEDET for further consideration in terms of the identified impacts associated with the unlawful construction of the roads.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	33 The author of the Cultural Report, Prof. van Vuuren, mentions at page 11 that "Madimatle is central to the cosmological world of the Kgatla and neighbouring communities" and records that the healers interviewed by him "believe that they not only speak on behalf of traditional healers from Kgatla but healers from all over South Africa and Botswana". This supports the contention that the site is of national and even cross-border cultural heritage significance and that it should be declared a Grade 1 heritage site.	Specialist's response:  "It is up to SAHRA to decide whether the site is on national or provincial significance, a decision which does not rest with the applicants."
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The mitigation measures proposed derive from the author's consultation with two traditional healers, who are not authorised to make recommendations on mitigation measures on behalf on the entire traditional community, comprising of traditional healers and local, national and international community members. The local community and healers will not agree to a management plan which includes mining on the mountain itself. The proposed mitigation measures appear to lose site of the cultural and spiritual link between the caves and the mountain itself.	Specialist's response:  "It should be noted that the socio-cultural heritage has both a tangible and intangible context. None is measurable in terms of quanitifcation, and for that reason a qualitative and participatory research process is followed."  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Contrary to the Heritage report, the Social Impact Assessment ("SIA") report compiled by San - Marie Aucamp, specifically mentions that "the cultural significance is not only limited to the caves, but includes the whole Meletse mountain". This is an important element which is also emphasized by our client's independent heritage consultant and which Professor Van Vuuren's report loses sight of.	Specialist's response:  "In the oral history record and written sources Madimatle is mentioned with reference to the cave, the actual site of cosmological engagement, and not the mountain. In my report it is mentioned that the cave has a number of entrances and these may be elsewhere on the mountain. Also, the harvesting of ethno-botanical material cannot be limited to the cave alone but the entire mountain".
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The SIA report states that not all of the identified social impacts can be mitigated. The SIA discusses the creation of employment that will be created by the mine however this must be contrasted against the loss of tourism, and tourism related employment, in the area. The author of the SIA Report mentions that once the life of the mine has expired, the livelihood of people employed by the mines will similarly expire, unless a sustainable development programme is developed. It is noted that there is a growing and sustainable tourism industry which is centred around the unique ecology of the area, the uninterrupted views of the Meletse and surrounding mountain ranges and the surrounding game farms. This is identified as a significant economic driver in the relevant Municipal Integrated Development Plan and Spatial Development Framework. Notwithstanding this, very little attention is devoted to the impacts of the unlawful road clearing on these factors and particularly the impacts in the event that ex post facto environmental authorisation is granted, paving the way for the use of the roads by heavy mine equipment and vehicles. It is noted that many of the workers that will be employed by the mines will be male whereas the majority of the staff employed by the game lodges are female, and in many instances are the breadwinners of the family. The failure to analytically and scientifically assess the socio-economic impacts and benefits of an 18 year mining programme	Specialist's response:  "The SIA is done as part of the EIA study, which is project and site specific. The purpose of the SIA is to determine, assess and evaluate the consequences, both positive and negative, of the proposed project on the receiving environment, as it currently is, from a social perspective. Tourism is an important land use in the area, and the proposed impacts on tourism has been identified and assessed in the report."



		with the longer term, and, we submit, more sustainable socio-economic benefits of tourism is a glaring omission.	
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	37 The author of the SIA suggests that Aquila obtain a social operating license. This is not explained fully within the remainder of the report and we are uncertain as to the purposes of such license. The positive impact of job creation by the mine needs to be weighed against the various cultural and religious rights that will be adversely and irremediably affected by the construction of the mine on Madimatle.	Specialist's response:  "Social license to operate is a concept that is used in the mining industry and social sciences to describe an intangible state of affairs, and not a license on a piece of paper such as a water use license. As per the definition in the Glossary of Terms in the report, social license to operate can be described as the acceptance and belief by society, and specifically local communities, in the value creation of activities. Social license cannot be obtained by going to a government authority and making an application or simply paying a fee. It requires far more than money to truly become part of the communities in which a company operates. Social license to operate can further be described as the degree of match between stakeholders' individual expectations of corporate behaviour and a company's actual behaviour. One of the primary objectives of gaining social license to operate is to minimise project risk.  Impacts are weighed against one another through the impact ratings. Positive impacts do not outweigh negative impacts — each impact is rated and mitigated individually."
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	38 The SIA Report mentions that the proximity of the caves to the proposed mining site is a concern. Aquila cannot allege that the caves and their cultural and spiritual significance to various affected parties are unaffected due to the fact that the caves do not fall within the mining area footprint.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	In addition, the SIA Report incorrectly records that "a person can only go the caves when his or her heart is free, not when they have problems." We have interviewed many people who visit the mountain and caves in their times of need. However, the SIA Report accurately records that the ancestors will not allow mining at Madimatle and that the ancestors will be disturbed by the noise caused by the mining.	Specialist's response:  "The SIA conveys what has been communicated to the authors by the relevant parties, and the author is not at liberty to change their words. The traditional healers that use the caves reported "a person can only go to the caves when his or her heart is free, not when they have problems". The traditional healers have also indicated that when people have problems, they should send an intermediary to consult with the ancestors on their behalf. It is noted though that not all the visitors to the cave may hold this view."



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	It is interesting to note the use of strong language contained in the report with regard to the potential impacts on cultural rights. The author acknowledges that this is a very sensitive matter and that the violation of cultural heritage impacts directly on the human rights of the affected community, who have the right to place the proposed mining activities in the international spotlight. The author also states that "if the cultural heritage of the people is violated, it cannot be restored."	Noted.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The SIA Report records that the mine has tried to consult with the group (affected community) but they were not open to the mine's attempts. In the event that this is true (which is not admitted) it may have everything to do with the fact that Aquila has lost their "social licence" and breached the trust of the affected communities through their unlawful activities. In the circumstances, the EAP needs to come up with more effective ways of consulting and engaging with the affected communities to ensure adequate public participation.	The traditional healers (groups with religious interest) are included in the project's IAP database and are consulted as part of the current public participation process (refer to Table 47: Meletse Mountain Religious Interest of the IAP database).  Furthermore, an Anthropologist was appointed on the 17th of March 2014, who consulted directly with the traditional healers. The specialist report is attached to this Section 24G EIR as Appendix F16.  Two further community meetings were held on the 12th of June 2014 (at Rooiberg and Regorogile), and the traditional healers were notified telephonically prior thereto (as per list obtained by Anthropologist). Refer attendance list in Appendix E7. The groups with religious interest are notified along with other IAPs with regards to progress on the Section 24G Rectification Application
		In conclusion, the SIA Report records the effects that mining will have on Madimatle more accurately than the Cultural Report. The SIA Report also shows an understanding of the significance of Madimatle and the link between the mountain and the caves, which is absent from the Cultural report. It is important to note that the SIA report is drafted solely for the purposes of recording the social impacts that the mine will have on the community and in the area. Furthermore, the SIA records that the impact of mining on Meletse and nearby the caves, will have irreversible consequences for the practice of religion or culture. Other impacts which are listed as "irreversible" include the destruction of a sense of place, influx of people, safety and security, traffic, social ills and the visual landscape.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Our clients ask that Ms Collete Scheermeyer of SAHRA be included as one of the stakeholders and that she be copied in on any correspondence and be furnished with copies of any reports generated through the various processes being managed by Shangoni.	Your request is noted. Ms Collette Scheermeyer of SAHRA has been included in the Stakeholder list and will be copied in on future correspondence.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Furthermore, our clients maintain that, in respect of certain I&APs such as labour tenants on surrounding farms and staff in the nearby and surrounding lodges whose job security stands to be adversely affected by Aquila's unlawful activities, particularly in the event that Aquila's unlawful conduct is authorised <i>ex post</i> facto under section 24G of NEMA, there has been no engagement, let alone consultation.	A Public Meeting was held on 01 February 2014. Furthermore, two additional Community Meetings were also held in Rooiberg and Regorogile on 12 June 2014. These Community meetings were also advertised in the local newspapers (refer to details as contained in this Public Participation section of thie EIR as well as Apendix E). The purpose of the Community meetings was indicated as follows (as contained in the newspaper advertisements): "To present background information on the project and associated past (Section 24G rectification application) and proposed mining activities in terms of Environmental Impact Assessment (EIA)



			Regulations of 2010) 1998, as amended, (NEMA)), Mineral and Petroleum Resources Development Act, Act No. 28 of 2002 (MPRDA), National Water Act, Act No. 36 of 1998 (NWA), Environmental Management: Waste Act, Act, Act No. 59 of 2008 (NEM:WA) to Rooiberg community members and farm workers living and working on farms in the surrounding area and to provide an opportunity for questions and comments. This meeting forms part of the public participation process, and will be structured in the format of a Public Participation Meeting". A Tswana translator was also present at the Community meetings.
18/08/2014 Letter  Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	45	Grounds on which the EAP should be disqualified:  Our clients maintain that the EAP has not met the required levels of objectivity and independence required under NEMA and that the EAP should be disqualified from pursuing the applications for environmental authorisation under section 24 and 24G of NEMA any further.	Regulation 17 of the Environmental Impact Assessment Regulations (EIA Regulations) states that an appointed EAP must, at all times, be independent and objective in facilitating/managing an application for an environmental authorisation, even if this results in views and findings that are not favourable to the applicant.  Independence is defined in the EIA Regulations as meaning "that the EAP (in this instance, Shangoni) has no business, financial, personal or other interest in the activity, application or appeal in respect of which that EAP is appointed in terms of these Regulations other than fair remuneration for work performed in connection with that activity, application or appeal; or that there are no circumstances that may compromise the objectivity of that EAP or person in performing such work.  In Shangoni's initial project proposal for this particular project, it is stated that payment for the work done by Shangoni is not subject to a positive outcome of the application. Thus, Shangoni has no business, financial, personal or other interest in this activity other than the fair remuneration for the work performed in connection with this activity. Shangoni complies with the independence-requirement set out in regulation 17.  Because of the fact that Shangoni has no interest in this activity other than the fair remuneration for the work done by Shangoni is not subject to a positive outcome of the application, no circumstances exist that may compromise the objectivity of the EAP (as required per the definition of "independence" set out above).  Based on the facts stated above, Shangoni did indeed act independently and objectively at all times in this process and therefore complies with all the requirements set out in regulation 17 of the EIA Regulations.

18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	This contention is based on the fact that Shangoni are also responsible for Aquila's mining right application which is pending under the MPRDA. In our objection to the mining right application we have pointed out various misrepresentations by Shangoni of the true facts and material omissions in relation to Aquila's contravention of its prospecting rights which reveal a clear lack of independence. Copies of our clients' objections to the mining right application have been copied to Shangoni.	There is no legal restriction on work simultaneously conducted, by the EAP, on different projects for one applicant. Therefore Shangoni may manage numerous applications simultaneously for one client, as is being done for Aquila Steel. This, in no way, taints Shangoni's independence and objectivity. Of further note, is the due attention and consideration placed to consider the inputs from IAP's within this Section 24G EIR.  Shangoni as the independent EAP has objectively represented all the available information and portrayed the extent and severity of the actual and potential impacts on the environment. The technical report furthermore clearly indicates which impacts will remain of high significance and which impacts can be mitigated. Information from the specialist reports were used to derive the conclusions. The technical report meets the requirements as specified in regulation 17 of the NEMA EIA regulations of 2010.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	Our clients' concerns in relation to Shangoni's lack of objectivity and independence were confirmed in the public meeting held at the 31st of May 2014 at the Graceland Church in Thabazimbi. All the interested and affected parties that were present at the aforesaid meeting will confirm that the chairperson of the meeting, Mr Jacs van Rooy of Shangoni, the reviewer of the amended draft section 24G NEMA report and Environmental Management Programme ("EMP"), conducted the meeting in an overfly hostile manner which was not conducive to effective public engagement and participation and showed clear bias towards his client, Aquila, whose representatives were present and to whom he was obviously pandering. A letter setting out our clients' further queries and concerns following this meeting is attached.	The session held on 31 May 2014 was a specialist information session (additional to the Public meeting held on 01 February 2014 and the Community Meeting held on 12 June 2014). The mentioned session was requested by IAP's during the 01 February 2014 Public Meeting. The purpose and method of conducting the mentioned specialist information session was agreed to during the public meeting held on 01 February. The method of conducting the meeting was further explained prior to the session (as part of the notice (see below) that was sent out, dated 27 May 2014), as well as during the session held on 31 May 2014. Mr Jacs van Rooy fulfilled the part of facilitator during the session. The voice recording of the mentioned session is available electronically, should LEDET request such information in order to acertain whether the facilitator conducted the meeting in an overtly hostile manner.  The notice that was sent out prior to the mentioned Information Session reads as follows: "This Information Session will allow Interested and Affected Parties (IAP) the opportunity to personally raise questions to specialists regarding the results of completed specialist studies. Each specialist (see below specialists that will attend) will be available at a specific station where questions can be raised. Please note that this section is not structured in the format of a Public Participation Meeting (i.e. no minutes will be kept). Any IAP concerns that may arise will need to be addressed (in letter or e-mail) to Shangoni after the Information Session, and will be recorded in the relevant IAP Comments and Responses Reports."

		E DRAFT SECTION 24G NEMA ENVIRONMENTAL MANAGEMENT PLAN (MP")	Refer to responses below.
	48	Considering the extent of the impacts that have been caused by Aquila's unlawful activities and the confirmation in the amended section 24G NEMA report that various impacts are irreversible and are incapable of remediation or mitigation, the EMP is scant consolation to our clients.	
18/08/2014 Werksmans Attorneys Letter (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter 49	Although the documentation makes reference to the development of a rehabilitation plan, no such plan is included in the documentation currently. It is submitted that this rehabilitation plan must be circulated for public and stakeholder comment and must be included in the documentation presented to the environmental authority.	Your concern is acknowledged, however, there are constraints with respect to detailing timelines and strategies for rehabilitation without a final decision made by LEDET.  As a mining right application has been lodged by Aquila
18/08/2014 Letter  Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter 50	As far as the impacts that are capable of mitigation or remediation are concerned, it is submitted that these should be implemented immediately to ameliorate against further impacts while the various statutory processes are underway and pending the outcome of any criminal prosecution and that this should be directed by LEDET in accordance with section 28(4) of NEMA.	Steel for proposed mining to take place on the properties on which prospecting activities (and the associated unlawful road construction) have occurred, this may influence the rectification measures and applicable time-line associated therewith.  During an Authorities meeting held with LEDET on 05 August 2014, a request was made by LEDET to assess the extent to which the existing roads can be utilised for the proposed mining activities (should an authorisation be issued). The purpose of this is to prevent unneccesary road construction (and related impacts) on the site, should mining be permitted. This information will be provided as part of the draft EIR for the proposed Meletse Iron Ore Project.  In the event that the applications for a mining right and environmental authorisation for the proposed Meletse Iron Ore Project are not successful, the development of a detailed rehabilitation plan will commence immediately.  In the development, approval and implementation of such a rehabilitation plan will commence immediately.  In the development, approval and implementation of such a rehabilitation plan will commence immediately.  Putalied specialist inputs as reflected in the mitigation measures;  Detailed specialist inputs as reflected in the mitigation measures;  Public consultation to ensure concerns from IAPs are adequately incorporated in both the technical design and implementation of such rehabilitation plan;  Submission of the rehabilitation plan to LEDET for approval (prior to implementation), including detailed rehabilitation budget linked to the implemention timeline and proof of the financial instrument applied to secure the funds;  Bi-annual rehabilitation progress reports to be submitted to LEDET;



			<ul> <li>Rehabilitation progress reports and post-rehabilitation monitoring to be undertaken by an independent specialist;</li> <li>Feedback to IAPs on progress with regards to rehabilitation (e.g. copies of above reports); and</li> <li>Any other measures that may be imposed by LEDET.</li> </ul>
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	On Page 22 of EMP the EAP describes the degree to which the impacts have caused irreplaceable loss and states that, " apart from the environmental disturbances (an understatement if ever there was one) caused by the road works, human movement and blasting, the damage in the human relations domain may be difficult to restore." (Underlining provided)	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	This reflects that Aquila's priorities in respect of the anthropological impacts are entirely misdirected. The concern seems to focus on the damage to the human relations domain rather than the fact that proceeding with a mining operation is a human rights issue in that it will amount to a complete denial of the right of the Community to practice their culture and religion.	Independent specialists were appointed to look at Heritage and Anthropological issues with regards to the unlawful construction of the roads. Impacts as identified by field specialists have been incorporated into this Section 24G.  Your concerns are acknowledged and form part of this
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The proposed mitigation measures in respect of the anthropological impacts are recorded on page 21 of the EMP. Aside from the proposed mitigation through the declaration of the Madimatle site as a provincial or national heritage resource (for the reasons expressed we are firmly of the view that the site is deserving of national heritage status), the remainder of the management/mitigation measure focuses on issues such as a perimeter fence, access control, the construction of a waiting and preparation area, telephone services for the proposed caretaker and some kind of compensation for the original residents in the area. It fails to deal with the essential questions of how Aquila will maintain the integrity of Madimatle and the caves, in light of the factors depicted in this letter as to the mutual exclusivity of the true purpose of religious and cultural practice as opposed to mining purposes. The reason that the s24G EMP fails to deal with this aspect is that there are no mitigation measures possible.	Specialist's response:  "Mitigation is seen by ordinary community members as what they may think the immediate or urgent needs are. There may be many others".  A future management plan for the cave will form part of the environmental authorisation documentation for the proposed mining and related activities (EIA process), and will need to be developed and implemented as part of potential future mining activities, should the applications for a mining right and environmental authorisation be permited.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Despite the SIA study clearly describing the link between Madimatle and the caves, no mitigation measures and/or action points address the religious and cultural significance of Madimatle mountain itself. Equally, the EMP fails to consider the influence of the other identified impacts such as Visual, Blasting, Traffic, change in Sense of Place and Noise on the anthropological importance of Madimatle.	The scope in which an anthropological and social impact assessment is conducted does not assess the impacts in terms of blasting, noise and visual, as these specialist fields are covered by the specific specialists (i.e. blasting and vibration-, visual- and noise specialists), as accordingly covered within this Section 24G EIR.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	55 The sections dealing with blasting and noise impacts do not deal with cultural and religious/spiritual impact of blasting and noise, including in respect of people accessing the caves and using the caves for religious purposes.	The scope in which an anthropological assessment is conducted does not assess the impacts in terms of blasting, noise and visual, as these specialist fields are covered by the specific specialists (i.e. blasting and vibration-, visual- and noise specialists), as accordingly covered within this Section 24G EIR.



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	There is similarly no assessment under the visual impacts nor, mitigation measures proposed, in respect of the visual impacts on the mountain and its significant from a cultural and religious point of view.	
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	57 The sections of the EMP dealing with the anthropological impacts are fatally flawed because they are based on the incorrect premise that Madimatle refers only to the caves. Consequently, the descriptions of the impacts in the EMP are wholly inadequate as they only take into account the caves and do not view the heritage resource holistically.	Specialist's response:  "In the oral history record and written sources Madimatle is mentioned with reference to the cave, the actual site of cosmological engagement, and not the mountain. In my report it is mentioned that the cave has a number of entrances and these may be elsewhere on the mountain. Also, the harvesting of ethno-botanical material cannot be limited to the cave alone but the entire mountain".  Extracts from the specialist's report:  "The cave is said to be 'endlessly' deep and contains large cavities sizable enough to house the ancestral village and daily village activities of the badimo."  "Madimatle has several smaller entrances and chimneys some of which are almost invinsible to outsiders."
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	58 Shangoni attempts to explain away the lack of engagement and consultation with religious leaders as follows in their letter of October 2012-  "An attempt to consult with religious leaders took place. The applicant organised a meeting to consult with the local community Sangomas and spiritual leaders as far back as 15 October 2012. The meeting request was accepted by Ms Yvonne Kgotlang and as the local user she was organising the other users to attend. On the day they decided not to attend"	known to be a site of tranquil and silence"  The letter referred to was not compiled by Shangoni Management Services, but by the applicant (prior to Shangoni Management Services having been appointed as EAP). The section was included as the "Applicant's response" in the previous draft version of this Section 24G EIR.  Your concerns are acknowledged and form part of this
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	The full particulars of the people to whom this request was sent, method of delivery of the requests for meetings on numerous occasions have not been forthcoming. A second letter has been provided by Aquila dated 6 February 2013, setting out inter-alia that -  "Aquila has attempted to communicate with the religious and cultural groups who utilize the cave as a site of prayer and rituals. To date all attempts have not been successful. A specific meeting was advertised and scheduled for 10 November 2012 and no community representative or member of any cultural group attended the meeting or communicated with Aquila. Aquila has therefore taken the decision in accordance with the law to suspend all access to the cave until further notice or until such time that the stakeholders, including Aquila, can discuss the utilization of the cave and come to a mutually beneficial agreement regarding the cave, its significance and utilization. All trespassers will be prosecuted. Kindly direct all queries and comments to <a href="mailto:ivanbreda@aquilaresources.co.za">ivanbreda@aquilaresources.co.za</a> . We look forward to hearing from you soon".	Section 24G EIR that will be submitted to LEDET.



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	60 Similarly, no particulars of to whom this letter was allegedly sent nor the method and/or proof of delivery has been provided by Aquila.	Subsequent to the attempts made by Aquila Steel to consult with the traditional healers, an Anthropologist was appointed (refer to the resultant report in Appendix F16.  Refer to Section 6 of this Section 24G EIR contains the details with regards to the public participation conducted.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	This is highly concerning, and supports the assertion that public participation has been insufficient, particularly in the light of the cultural heritage significance of Madimatle as demonstrated herein.	
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	We point out that, far from there being a reluctance to consult as suggested by Aquila, the opposite plainly holds true. Our understanding is that the affected community members and religious leaders would welcome the opportunity to consult, but their input has not been sought by Aquila either in relation to their section 24G NEMA application or as a precursor to their application for a mining right.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	CONCLUSION:  Our clients' maintain that there are fundamental flaws in the application which are described in more detail above and in our previous letter of 11 April 2014 which, together with Aquila's wilful and unlawful conduct and the significant environmental degradation which they have caused through this, militates strongly against <i>ex post</i> facto environmental authorisation in terms of section 24G of NEMA. To grant environmental authorisation in these circumstances will create a perverse incentive to break the law, will create a precedent for abuse of section 24G, is a disincentive to compliance and undermines good environmental governance.	Refer to responses to specific comments above.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Instead, the correct decision is to refuse environmental authorisation and direct the rehabilitation of the affected environment to its previous state as far as possible, alternatively to suspend the application for rectification in accordance with section 24G (6) and (7) of NEMA until such time as any criminal prosecution, to be brought by the environmental, minerals and water authorities, has been concluded.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	COMMENTS ON SPECIALIST STUDY INFORMATION SESSION ("SESSION") AT GRACELAND CHURCH, THABAZIMBI HELD ON 31 MAY 2014 – INFORMATION STILL OUTSTANDING AND CONCERNS.  1 We refer to the above matter and to the session held on 31 May 2014 attended by the writer and Louis Bick of Werksmans Attorneys.	Refer to responses below.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	As per your notice of 25 May 2014, sent by email, the purpose of this session was to allow interested and affected parties ("IAP's") the opportunity to personally raise questions to the specialists appointed by Aquila steel (South Africa) Pty Ltd ("Aquila") as part of the application processes listed below, regarding their findings contained in their completed studies.	The notice that was sent out reads as follows: "This Information Session will allow Interested and Affected Parties (IAP) the opportunity to personally raise questions to specialists regarding the results of completed specialist studies. Each specialist (see below specialists that will attend) will be available at a specific station where questions can be raised. Please note that this section is not structured in the format of a Public Participation Meeting (i.e. no minutes will be kept). Any IAP concerns that may arise will need to be addressed



			(in letter or e-mail) to Shangoni after the Information Session, and will be recorded in the relevant IAP Comments and Responses Reports."
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	2.1 Environmental Management Programme Report ("EMPR") in terms of the Mineral and Petroleum Resources Development Act, 2002 ("MPRDA").	Confirmed
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	2.5 Environmental Impact Assessment in terms of the Environmental Impact Assessment Regulations of 2010 (Regulations in terms of Chapter 5 of the National Environmental Management Act, 1998) ("NEMA"), and associated specialist studies.	Confirmed
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	2.6 Integrated Water Use License in terms of Section 21 of the National Water Act, 1998 ("NWA").	Confirmed
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	2.7 Waste Management License in terms of National Environmental Management: Waste Act, 2008 ("NEMWA").	Confirmed
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	2.8 Section 24G Rectification Application in terms of NEMA.	Confirmed
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	3 From the outset, it is submitted that this session did not fulfil the above-mentioned functions for the reasons detailed below.	Refer to responses below.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	4 All the interested and affected parties that were present at the aforesaid meeting will confirm that the chairperson of the meeting, Mr Jacs van Rooy of Shangoni, the reviewer of the amended draft section 24G NEMA report and Environmental Management Programme ("EMP"), conducted the meeting in an overtly hostile manner which was not conducive to effective public engagement and participation and showed clear bias towards his client, Aquila, whose representatives were present and to whom he was obviously pandering.	Shangoni Management Services disagrees with this statement.  The voice recording of the mentioned session is available electronically, should LEDET request such information in order to acertain whether the facilitator conducted the meeting in an overtly hostile manner or with clear bias towards the applicant.



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	Many interested and affected parties had travelled a great distance to attend the meeting only to be told that their questions would not be addressed in an open manner by the panel of experts in attendance but should be put to each expert individually their separate stations. When it was pointed out to Mr Van Rooy that this was a impractical arrangement, would result in repetition of questions, did not afford the other l&AP's the benefit of hearing answers to questions posed by other l&APs and that was not conducive to constructive engagement, particularly considering the time constraints, he overruled this without any rational or reasonable explanation.	information session (additional to the Public meeting held on 01 February 2014 and the Community Meeting held on 12 June 2014). The mentioned session was requested by IAP's during the 01 February 2014 Public Meeting. The purpose and method of conducting the mentioned specialist information session was agreed to during the public meeting held on 01 February 2014. The method of conducting the meeting was further explained as part of the notice (dated 27 May 2014) that was sent out prior to the session as well as during the session held on 31 May 2014. Mr Jacs van Rooy fulfilled the part of facilitator during the session. The voice recording of the mentioned session is available electronically, should LEDET request such information.  The notice (referred to above) that was sent out reads as follows: "This Information Session will allow Interested and Affected Parties (IAP) the opportunity to personally raise questions to specialists regarding the results of completed specialist studies. Each specialist (see below specialists that will attend) will be available at a specific station where questions can be raised. Please note that this section is not structured in the format of a Public Participation Meeting (i.e. no minutes will be kept). Any
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf	Justin Truter	4.2 Another concern is that very few interested and affected parties from the surrounding community were present at the session. It is submitted that the EAP's contention the	
Letter	Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")		this meeting was not a general public meeting and therefore not an open meeting disconcerting, as the purpose of this meeting was to inform interested and affected parties of a very technical assessment process and to independently answer and questions which the general public may have in this regard.	minutes of the mentioned meeting, Mr Andrew Nicholson requested that "a meeting be held where all the
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	Justin Truter	<ul> <li>We have previously motivated the basis on which we contend that Shangoni should be disqualified from acting as the EAP and Mr Van Rooy's conduct lends credence to the concerns regarding Shangoni's independence and objectivity. This is all the more seconsidering that Mr Van Rooy is the reviewer of both the draft section 24G NEMA report and draft EMP.</li> <li>During the isolated question and answer sessions with certain of the expert consultants (time did not permit engagement with all the consultants in attendance), the following information was identified as being outstanding:</li> </ul>	As 13 specialists were scheduled to be present at this meeting, Shangoni felt that to effectively facilitate such an information session, and to allow a one-on-one discussion between concerned party and specialist, that a specialist-station-approach would be most suitable. This session was above and beyond the open forum public participation process, and was not intended to
				Mr van Rooy was overtly hostile, however, from further review of the recording, it is evident that he was only



			maintaining order and ensuring that the original request was being honoured.  The voice recording of the mentioned session is available electronically, should LEDET request such information in order to acertain whether the facilitator conducted the meeting in an overtly hostile manner or with clear bias towards the applicant.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	6.1 Information on historical ownership of the property, prospecting activities and road construction:	Refer to responses below.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	6.1.1 We require confirmation that regarding whether any due diligence reviews were ever conducted before Aquila commenced prospecting and/or purchased the property.	Shangoni Management Services is not in a position to provide information on this, as Shangoni was not involved in previous processes in this regard.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	6.1.2 We also require details regarding the previous Environmental Assessment Practitioners ("EAP") involved in this matter prior to the appointment of Shangoni.	The applicant has indicated that Enviro-Solutions was the party.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	6.1.3 At the meeting, it became apparent that the construction of roads had occurred prior to 2007 already. We require information regarding the historical (pre-2007) road construction activities.	In an attempt to address the previous concern regarding activities prior to September 2007, a map was compiled (refer to Figure 2), depicting existing farm roads on the property prior to commencement of the prospecting activities. Shangoni confirmed this information with Aquila and was informed that this information is correct.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	6.2 Impact on the surrounding environment:	Refer to responses below.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	6.2.1 We require confirmation of the number and species of protected trees that have been removed from the site as a result of the unlawful road construction and associated activities including as recently as in January 2014. We also ask that conformation be provided regarding the exact the number of drill sites that were cleared and the exact length of the roads constructed which formed the basis of the <i>ex post facto</i> section 24 G NEMA application. At the meeting, the writer requested more detail regarding the exact extent of the disturbance of the site as a result of construction of the unlawful roads and the answer provided was insufficient. We note that the amended section 24G NEMA report now provides more accurate detail regarding the extent of illegally constructed roads.	Noted. Refer to Section 1.3 of this Section 24G EIR and Figure 2, for detail as to the roads constructed and blasting activities.  Applicant's response: "Twelve (12) Leadwood trees were removed".



18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	6.3 Socio-economic impacts:	Refer to responses below.
18/08/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf")	It was apparent from the discussion with the social impact specialist that there had been inadequate assessment of the impacts of the activities on tourism and a lack of consultation with affected communities. It is noted that there is a growing and sustainable tourism industry which is centred around the unique ecology of the area, the uninterrupted views of the Meletse and surrounding mountain ranges and the surrounding game farms. This is identified as a significant economic driver in the relevant Municipal Integrated Development Plan and Spatial Development Framework. Notwithstanding this, very little attention appears to have been devoted to the impacts of the unlawful road clearing, which includes irremediable visual impacts and ecological impacts, on these factors and particularly the impacts in the event that <i>ex post facto</i> environmental authorisation is granted, paving the way for the use of the roads by heavy mine equipment and vehicles. It is noted that many of the workers that will be employed by the mines will be male whereas the majority of the staff employed by the game lodges are female, and in many instances are the breadwinners of the family. The failure to analytically and scientifically assess the socio-economic impacts and benefits of an 18 year mining programme with the longer term, and, we submit, more sustainable socio-economic benefits of tourism, is a glaring omission.	Specialist's response:  "The public participation process is legislated and has certain requirements in terms of stakeholder communication and consultation, as described in the NEMA Regulations and the MPRDA. This should not be confused with social impact assessment where consultation takes place at the discretion of the specialist. Furthermore one should distinguish between a tourism impact assessment and a social impact assessment. From a social perspective, the concern is about the impact of planned activities on the livelihoods of the people employed by tourism establishments, and this has been addressed in the social impact
22/10/2014 Letters	Rooiberg Bewaria E.B. Nieuwou	I am representing Catwalk Investments 380 (Pty) Ltd that owns the Remaining Extent of Portion 2 and Portion 29 (a Portion of Portion 2) of the farm Buffelshoek 446KQ, and E.B. Shelf Investments 166 (Pty) Ltd that owns the Remaining Extent of the farm Rebelsig 611 KQ. I am directly affected by the illegal roads constructed as part of the prospecting activities that have taken place by Aquila Steel (S Africa) (Pty) Ltd for their Meletse Iron Ore Project. As I am bordering the affected properties, it directly affects me, also visually. As part of Rooiberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC. Please see attached to my letter a copy of the feedback from Umhlaba.  At long last from the documentation available, it is clear that Aquila and Shangoni now more accurately reflect the huge damage that was illegally done to the environment. We went to great pains to repeatedly report this to Aquila and Shangoni (and the representatives before them) in Public meetings and feedback provided over a long period of time. It was also reported to the relevant authorities as long back as 2011. Aquila has always told us that they have not done anything illegally and their legal representatives, Webber Wentzel Attorneys, boldly declared in 2011 that "In particular our client is not acting unlawfully in relation to the constructin of a road on the farm Randstephne". We also notice from the latest version, that consistent with their history of misrepresentation, Aquila is now referring to "Partially rehabilitated" roads, rather than "rehabilitated" roads that they referred to up to now. We have repeatedly requested transparency on the rehabilitation that Aquila has claimed to do, because of the visual scar and ongoing damage due to the illegal transgressions. This affectes all neighbouring properties on a daily basis.  We urge the authorities again to take the strongest possible action against this blatant disregard for the envi	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer also to responses (below) with regards to the Umhlaba Environmental Consulting letter received.



			rehabilitate the illegal roads to their pre-disturbed state. We also urge the authorities to force Aquila to provide exact detail and commitment regarding interim rehabilitation, financial provisioning included.	1	
22/10/2014 Letter – dated 22/10/2014 (sent to Shangoni Management Services on 24/10/2014)	Meletse Game Reserve	Fred Stow	As the General Manager of portion of Meletse Game Reserve, I am directly affected by the illegal roads constructed as part of the prospecting activities that have taken place by Aquila Steel (S Africa) (Pty) Ltd for their Meletse Iron Ore Project.  As part of Rooiberg Bewaria, I concur with the comments and requirements included within the commissioned feedback provided by Umhlaba Environmental Consulting CC. Please see attached to my letter a copy of the feedback from Umhlaba.  In addition to the concerns raised by Umhlaba, I would like to draw your attention to my specific concerns which I do not feel are adequately addressed;  The fact that such illegal road construction was allowed to continue unabated and unchecked for so many years, without any effective departmental intervention or sanction.  Why no formal prosecution has even been considered by any law enforcement agency, in so far as the actions of Aquila, which were blatantly illegal on a preposterous scale?  The outcome of this process should be action taken by Aquila to rehabilitate the illegal roads to their	24/10/2014	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer also to responses (below) with regards to the Umhlaba Environmental Consulting letter received.
			pre-disturbed state and the state to properly follow through on its designated mandate, to protect the environment of South Africa in the interests of all its citizens.		
21/10/2014 Letter	Umhlaba Environmental Consulting	Andrew Nicholson	At the request of Rooiberg Bewaria, I have provided feedback on the "Section 24G documentation", submitted on behalf of Aquila Steel (South Africa) (Pty) Ltd, for roads constructed illegally, to facilitate prospecting activities on the remainder of the farm Donkerpoort 448KQ and Randstephne 455KQ, Thabazimbi, Limpopo.  According to the original approved environmental management plan (EMP) for the Aquila prospecting activities, there would be between 1.6 to 3km of roads required to access 10 drill sites. Within the EMP there was no indication that blasting activities were required in order to create the required roads. In reality, 32.89km of roads have been generated, using blasting activities, to access ~ 200 drill sites.  The Limpopo Department of Economic Development, Environment and Tourism (LEDET) reference number for the application is 12/1 /9-6/S24G/15-W1.  The feedback is based on reviewing the information provided on the Shangoni website during September 2014. Shangoni is Aquila's appointed independent environmental assessment practitioners (EAP). I have reviewed the following documents in detail; The Section 24G Technical Report updated and completed in September 2014.  This is the fourth round of feedback provided on the Section 24G documentation, the previous being letters dated; 07 January 2014 – See point A 12 March 2014 – See point B 07 August 2014 – See point C		Noted.



21/10/2014 Letter	Umhlaba Environmental Consulting	Andrew Nicholson	Points A, B and C below provide details of the comments raised in the previous letters which remain relevant. Please note that I have only extracted comments which I believe have not been adequately addressed.  Point D provides the additional feedback relevant to the review of the documents uploaded to the Shangoni website in September 2014.  Point E provides my concluding remark.	Points A – C provided in Umhlaba Environmental Consulting's letter refer to comments made on previously reviewed versions of the Section 24G EIR.  For Point A, please refer to previous responses to comments made in the letter dated January 2014,  For Point B, please refer to previous responses to comments made in the letter dated March 2014, and  For Point C, please refer to previous responses to comments made in the letter dated August 2014.
21/10/2014 Letter	Umhlaba Environmental Consulting	Andrew Nicholson	Point A - Letter dated 07 January 2014: The main impacts created as a result of the illegal roads include: A huge visual impact on surrounding landowners (from an extended distance) as a result of extensive scarring on the mountain. This is particularly important as some of the surrounding landowners use their properties for ecotourism purposes which rely on a sense of a pristine environment in and around the area. Roads crossing watercourses thereby impacting on watercourses and local catchment area. Impacts associated with increased possibility of erosion from the roads. Fragmentation of sensitive habitats. Destruction of red data plants for the construction of the roads.  My recommendations going forward would be for Shangoni to: 1) Explain in greater detail the following information: a. Details of environmental considerations given during the construction of the roads. b. Which specific roads act as fire breaks. 2) At minimum the following information should be contained within the draft environmental assessment report: a. A programme linked to timelines of which roads are going to be rehabilitated. b. Detailed indication of how the road will be rehabilitated. A definition of a successful rehabilitated road should be provided. c. Details on how the impacts associated with the roads they intend to remain, will be minimized. d. An erosion management plan. e. A monitoring programme for rehabilitated roads. f. A maintenance programme for rehabilitated roads. f. A maintenance programme for rehabilitation of the roads and the ongoing monitoring / maintenance programme.	Points A — C provided in Umhlaba Environmental Consulting's letter refer to comments made on previously reviewed versions of the Section 24G EIR.  For Point A, please refer to previous responses to comments made in the letter dated January 2014.
21/10/2014 Letter	Umhlaba Environmental Consulting	Andrew Nicholson	Point B - Letter dated 12 March 2014: Linking of the Section 24G process to the proposed mine: This Section 24G process is being intrinsically linked to the future proposed Aquila mining operation. I feel that the EAP is presenting information in a manner that implies that the mine is a foregone conclusion and therefore the rehabilitation activities of the illegal roads can consider the future impact of the proposed mine and therefore avoid the majority of rehabilitation requirements of the roads.  None of the specialist studies provided have been specifically undertaken for the impacts associated with the illegal roads. For example, the storm water management plan and the visual impact assessment are all compiled for the intended future mine.  This is a concern as firstly the proposed mine is busy undergoing the various environmental legal application processes and no authorisation has been granted. Secondly if the mine does obtain all the correct legal authorisations it could be between a 5 – 10 year period before full scale mining is commissioned. During this time the impacts associated with the roads could have multiplied. I would like to see the technical report, environmental management plan and the applicable specialist reports written in a manner that assumes there is no mine. By doing this, I feel there will	Points A – C provided in Umhlaba Environmental Consulting's letter refer to comments made on previously reviewed versions of the Section 24G EIR.  For Point B, please refer to previous responses to comments made in the letter dated March 2014.



			be a better chance of obtaining a fair reflection of the impacts caused and rehabilitation		
			requirements of the illegal roads.		
			Lack of commitment to rehabilitation and lack of proof of rehabilitation:		
			In order to emphasise the lack of commitment to rehabilitation, I have included the following plans		
			(obtained from Aquila S24G documentation) at the end of this correspondence.		
			Plan 1: A map showing which roads have (apparently) been rehabilitated, which will be left		
			(assuming the mine proceeds) and which roads will be subjected to rehabilitation.		
			Plan 1 clearly indicated that a number of sections of the illegal roads have already been		
			rehabilitated. However there is no description of what rehabilitation activities have been		
			implemented and no proof in the form of before and after photographs.		
			implemented and ne preen in the form of seriore and alter protographs.		
			It would add a lot of value to the proposed rehabilitation activities to understand what processes		
			were implemented to rehabilitate the roads and how successful the process was and what lessons		
			can be learnt for future rehabilitation. Based on a history of misinformation provided by Aquila, I		
			would also insist on proof of the rehabilitation activities should be provided.		
			Inadequate consultation:		
			Inadequate consultation:		
			Public consultation failed to engage with the local Sangoma's who have indicated to the landowner		
			how sacred the Meletse Mountain is to them. This is a flaw of the consultation process as it has		
			not been all inclusive.		
			The EAP was made aware of the implications of the Sangoma's concerns by a landowner on 10th		
			February 2014. It is important that all views of the community are obtained and considered.		
			Understanding the cultural significance of the mountain to the local communities is imperative in		
			understanding the impact caused as a result of the roads.		
21/10/2014	Umhlaba	Andrew Nicholson	Point C - Letter dated 07 August 2014:		Points A - C provided in Umhlaba Environmental
Letter	Environmental		Based on my original feedback to Shangoni, the following issues have yet to be addressed;		Consulting's letter refer to comments made on previously
	Consulting		Explanation of the road construction activities taking place prior to September 2007 as noted on		reviewed versions of the Section 24G EIR.
			historical google earth images.		For Point C, please refer to previous responses to
					comments made in the letter dated August 2014.
			Additional concerns / recommendations;		
			The following main issues are outstanding and should be addressed;		
			Although the documentation includes a commitment for the development of a rehabilitation plan,		
			the plan is yet to be completed. I believe the rehabilitation plan should form part of the		
			documentation for submission to the authorities.		
			There should be firm commitment linked to timeframes committing to;		
			a. The actual completion of the rehabilitation plan by an appropriate specialist. Interested and		
			affected parties should be afforded the opportunity to provide comment on this plan.		
			b. The extent of roads to be rehabilitated on an annual basis until such time all the illegal roads		
			have been rehabilitated.		
			Based on historical experience, Aquila has not always maintained their word and commitments		
			and hence in addition to the appointment of an Environmental Control Officer, I would request		
			Aquila to establish a community forum that could form an oversight role in ensuring that		
			rehabilitation actually takes place.		
			In light of the above, it would be prudent that Aquila provide the full R 5.92 million guarantee for		
			the rehabilitation of the roads based on the budget indicated within the report (32.89 km x R150		
			per linear meter for rehabilitation and R 30 per linear meter for maintenance).		
			por inical motor for rendomitation and it of per linear meter for maintenance).		
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21/10/2014 Letter	Umhlaba Andrew Nicholson Environmental Consulting	Point D - This letter dated 22 October 2014:  The September 2014 document, in the main, is very similar to the document completed in August 2014. It would have been beneficial if the Environmental Assessment Practitioner (EAP) had	Noted.
		highlighted the changes between the two documents to ensure ease of review rather than have to review all 373 pages again.	
		Re-iteration of comments  The following issues have been raised in the previous correspondence but have yet to be adequately addressed by Shangoni on behalf of Aquila;	
		<ul> <li>Explanation of the roads generated prior to September 2007. Through using Google Earth it is clear that road construction activities were taking place in August 2007.</li> <li>The requirement for a detailed rehabilitation plan of the roads linked to specific timeframes.</li> </ul>	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
		Having a commitment to a rehabilitation plan is not good enough. The actual plan must be provided and circulated to all interested and affected parties for comments.	Refer also to responses on previous comments raised.
		<ul> <li>The linking of the Section 24G documents to the proposed future mine. The document is not specific to the illegal activities of the 33km of roads. An excessive amount of information is presented which has no bearing on the illegal roads yet does have a bearing on the mining right application submitted by Aquila to authorise future mining activities. I am of the opinion that this Section 24 G application, is based on the illegal roads alone and hence should not be painted with the same brush as the mining right application. Examples include;</li> <li>Providing the extensive geological section in the baseline environment</li> </ul>	As mentioned previousy, in an attempt to address the previous concern regarding activities prior to September 2007, a map was compiled (refer to Figure 2), depicting existing farm roads on the property prior to commencement of the prospecting activities. Shangoni confirmed this information with Aquila and was informed that this information is correct.
		<ul> <li>Including commitments to remove graves which are not necessary for the rehabilitation of the illegal roads, yet will be necessary for future mining.</li> <li>The lack of consultation with the indigenous community and Sangoma's concerning the illegal roads</li> <li>The request for Aquila to appoint an environmental control officer whose responsibility it will be is to oversee the rehabilitation activities and to communicate with the effected communities.</li> </ul>	As mentioned during Shangoni's previous response to Umhlaba Environmental Consulting's previous comments, the report is presented with limited consideration towards proposed mining and related activities, although (to some extent) one has to consider possible future activities when assessing risk and mitigation.
21/10/2014 Letter	Umhlaba Andrew Nicholson Environmental Consulting	Additional concerns since August letter:  Misrepresentation: One notable change in the documentation is that the EAP now indicates that the 1.95km of roads which in all previous documents was reflected as "rehabilitated" is now reflected as "partially rehabilitated". This misrepresentation in the historical documents is typical of Aquila.  Based on the indication of misrepresentation, the following clarification must be provided;  Why up until now, did Shangoni indicate that 1.95 km of roads were rehabilitated?	It has been mentioned previously in this report (as part of responses to comments), that all roads as disturbed, irrespective as to whether such is indicated as rehabilitated, is viewed by Shangoni not rehabilitated (thereby need to still undergo same rehabilitation requirements as for all other disturbed areas).
		<ul> <li>What actions were implemented to allow Shangoni to classify the roads as partially rehabilitated?</li> <li>What has being the success of the partial rehabilitation of the roads?</li> <li>How have the roads deteriorated since there construction?</li> </ul>	The following is mentioned in this Section 24G EIR: "The section of road shown as "partially rehabilitated" above, still needs to meet rehabilitation requirements applicable to all roads (as per the mitigation measures specified within this report)"; and "No rehabilitation of roads has been completed (even portion of road reflected as "partially rehabilitated")."
21/10/2014 Letter	Umhlaba Andrew Nicholson Environmental Consulting	Inconsistencies: There are inconsistencies throughout the document. I suspect that this is caused by in one instance the author considering the illegal roads while later during the report the author is considering the implication of mining. Examples include;  P 211 – commitment that there will be no further roads constructed.	Your concerns are acknowledged and form part of this
		P226 – Commitment to limit road network and plan roads to cross the least amount of different habitats.	Section 24G EIR that will be submitted to LEDET.
		Timeframes: I have a major concern regarding the timeframes associated with the implementation of documented management measures. Aquila need to make specific commitments linked to specific timeframes such as daily, weekly, quarterly or annually to implement measures to ensure that the impact associated with the illegal roads do not deteriorate and, over time, measures are implemented to rehabilitate the roads.	Specific timeframes (annually, monthly etc) have been provided as part of the mitigation measures, where relevant.



		Currently the report indicates the following in terms of timelines;  Construction – September 2007 through to January 2014  Operational – September 2007 through to January 2014  Closure – No yet undertaken.	
		These timeframes are then applied to the management commitments.  Based on this, there are no requirements to implement management measures covered under the construction and operational phases, as these timeframes has already passed. The commitments linked to a closure timeframe are open ended and hence rectification of the roads may only occur in 100 years.	Noted. The Operational Phase timeframe has been changed to "September 2007 – up until Closure". Refer to the Executive Summary and Introduction.
		The management commitments should be auditable. Based on historical experience of numerous broken promises, Aquila should be held to implementing activities within specific timeframes.	
		Financial provision: Finally, Aquila should be made to provide an upfront realistic monetary rand value for the future rehabilitation of the roads. Should Aquila not obtain authorisation to mine, the desire to continue to spend money on this project will diminish and potentially an unrealistically low value of money will be set aside for rehabilitation. The budget for the roads should be linked to the proposed management measures to be implemented.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
21/10/2014 Letter	Umhlaba Andrew Nicholson Environmental Consulting	Point E - Concluding remarks; The documentation completed by Shangoni highlight the severity of the impacts caused by the illegal roads constructed by Aquila. I would like to implore the Government Authorities to ensure that they make an example that blatant disregard of our environment is unacceptable and impose not only a fine but institute criminal proceedings against the relevant directors of Aquila.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	We refer to the above matter and previous objection letters dated 11 April 2014 and 15 August 2014. These letters contained comprehensive comments, the majority of which have not been adequately addressed, if at all, in the later iteration of the section 24G EIR and EMPR. The final section 24G EIR perpetuates the many gaps in the earlier EIR identified in our previous comments.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	2. The manner in which the final section 24G EIR is presented makes it extremely time-consuming to ascertain precisely what amendments have been made to the report. We submit that it is incumbent of the Environmental Assessment Practitioner ("the EAP") to identify these amendment in order to facilitate improved engagement with interested and affected parties ("I&APs) and to make it easier to comment on any changes.	Noted
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	We ask that our previous letters be read with this letters as various concerns persist.	Noted
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	We confirm that we act for Calshelf Investment 171 (Pty) Ltd, Calshelf Investments 172 (Pty) Ltd and Calshelf 173 (Pty) Ltd ("Calshelf"), represented by Mr Cosmos Cavaleros ("our clients").	Noted



22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	Justin Truter	5. As we have recorded previously, our clients are the owners of the land adjacent to the area on which Aquila Steel (South Africa) Pty Ltd ("Aquila") has undertaken various unlawful activities that have resulted in siginificant environmental degradation. Calshelf utilises its land as a private game reserve, as do many of the surrounding land owners.	Noted
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	Justin Truter	6. Although we limit our comments in this letter to certain pertinent issues that remain unanswered in the final section 24G EIR, we have not relinquished our reliance on the grounds raised in our earlier letters, to the extent that these are not addressed in either the body of the report or in the EAP's responses. In the majority of responses to our previous comments, the EAP simply, and glibly, records that our concerns are acknowledged and will be submitted to the Limpopo Department of Economics, Development and Tourism ("LEDET"). This is an entirely inadequate response.	Please refer to previous responses on this comment.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	Justin Truter	AMPLIFICATION OF PREVIOUS GROUNDS OF OBJECTION:  7. Inadequate stakeholder and public participation:  7.1 We maintain that the degree and amanner of public participation and engagement with affected traditional communities has been indadequate.	Refer to responses to previous comments made in this regard.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	Justin Truter	7.2 In table 47 of the final S24G EIR, the EAP provides a table of the traditional leaders and Sangimas ident as I&APs by Aquila's appointed anthropologist. According to the EAP, these I&AP's were contacted telephonically on 23 and 27 May 2014 and an invitation to the community meeting at Regorogile and Rooiberg was also sent by SMS.	Confirmed.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	Justin Truter	7.3 The table identifies thirteen religious leaders and it is apparent from the table that electronic mail and mail by post will not be an effective mean to reach these religious leaders. From the attendance register of the community meetings held on 12 June 2014, it appears that only one religious leader identified in table 47 attended the meeting.	The traditional healers and Sangomas were informed of the meetings. The EAP cannot guarantee attendance of all I&AP's to all meetings.  As previously mentioned, further consultation was conducted with the groups with religious interest through the Anthropological study was done.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	Justin Truter	7.4 We submit that the EAP should consider alternative and more effective means of undertaking public participation and consulting with religious leaders and the affected community. In this instance the Public Participation Guidelines ("the guidelines") of October 2012 published in terms of Section 24J of the National Environmental Management Act, 1998 ("NEMA") should be considered and applied.	Refer also to responses to previous comments made in this regard, in terms of the public participation process followed.
			7.5. The guidelines provide guidance on the level of public participation to consider, especially where I&AP's include rural and historically disadvantaged communities. Of importance is that the guideline state: - "The minimum requirements for public participation outlined in the EIA regulations will not necessarily be sufficient for all applications. This is because the circumstances of each application are different, and it may be necessary in some situations to incorporate extra steps in the public participation process"	
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	Justin Truter	7.6 Considering the grave and irreversible impact that Aquila's unlawful activities have had on the integrity of the Meletse Mountains and the cultural and spiritual significance of the Mountain, additional steps must be taken by the EAP to ensure that consultation with religious leaders and traditional community members is adequate and effective.	
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22/10/2014	Werksmans Attorneys Justin Truter	7.7 As previously noted, we are of the opinion that the mitigation measures proposed by the	Your concerns are acknowledged and form part of this
Letter	(on behalf of Calshelf	anthropologist after consultation with two traditional healers (recorded on page 22 of the EMPR)	Section 24G EIR that will be submitted to LEDET.
	Investments (Pty) Ltd,	which focuses on issues such as a perimeter fence, access control, the construction of a waiting	
	171, 172 173	and preparation area, restoration of the telephone line and a form of compensation for the	Refer also to response above and responses to previous
	("Calshelf") (Mr	original residents in the area, is not supported by the entire traditional community and the two	comments made in this regard.
	Cosmos Cavaleros)	traditional healers are not authorised to make representations on behalf of the entire community.	
	,	This again is an indicator that proper consultation with the community of traditional healers and	
		the community was lacking and is still lacking in the S24G EIA process.	
22/10/2014	Werksmans Attorneys Justin Truter	Inadequate assessment of the socio-economic impacts of the activities on tourism:	Note that this report relates to the unlawful road
Letter	(on behalf of Calshelf Investments (Pty) Ltd,	8.1 In our previous comments we noted that the Social Impact Assessment report ("SIA report") fails to analyse and contrast the loss of tourism and tourism related employment in the area in relation	construction activities. The proposed Meletse Iron Ore Project and impact associated therewith form part of the
	171, 172 173	to the creation of employment that the mining operations will bring.	Scoping and EIA processes followed.
	("Calshelf") (Mr	8.2 The SIA report recognises that "the conservation of wildlife is a driving force in the area with	
	Cosmos Cavaleros)	many farms increasingly focusing on game farming and conservation. There are also great	
		opportunities for birding, and touring the region by car / motor cycle has become increasingly	
		popular". Furthermore, the SIA recognises that "the Meletse Mountains is an icon in the area	
		that has been compared with Table Mountain. Many establishments have incorporated the	
		Meletse Mountains in their name or logos, or offer a view of the Meletse Mountains as a selling point."	
		8.3 Considering the fact that the SIA recognises that the tourist industry is considered a significant	
		economic driver in the relevant Spatial Development Framework and the above appreciation of	
		the importance of the Meletse Mountains to the tourist industry and the sense of place, it fails to	
		provide any statistical information on the impact on tourism related employment and simply	
		maintains that "statistics on the tourism industry in this area will be useful in this respect."	
		8.4 It would be logical that a physical disturbance of this degree to this important icon in the area	
		would have a direct social impact in that the tourist industry and especially tourism related	
		employment would be directly and negatively affected and a comprehensive assessment in this	
		regard would be vital.	
		8.5 It is also of concern that the author of the SIA report states that due to flooding and a time	
		constraint, some organisations of the tourism industry were not available to give their input within	
		the time constraint and have apparently indicated that they would very much like to give their	
		input. We submit that the SIA report should be amended to include input from various tourist	
		organisations, especially in regard to the impact on tourism related employment and the social	
		impact brought by the fact that many of the employees that stand to lose their jobs in the event	
		of a tourism down-turn are females and single parent breadwinners. These job losses will not	
		be accommodated by the mining jobs created which will be largely male dominated.	
22/10/2014	Werksmans Attorneys Justin Truter	8.6 Furthermore, the author of the economic study states that 105 jobs may well be lost in the local	Note that this report relates to the unlawful road
Letter	(on behalf of Calshelf	conomy but that 267 new jobs could potentially be created by the mining operations. Despite the	construction activities. The proposed Meletse Iron Ore
Lettel	Investments (Pty) Ltd,	fact that the author recognises the short life time of the mine, the author still maintains that he	Project and impact associated therewith form part of the
			· · · · · · · · · · · · · · · · · · ·
	171, 172 173	potential foreign exchange impacts still outweigh alternative land uses. However, more	Scoping and EIA processes followed.
	("Calshelf") (Mr	information on the potential growth of the tourist industry and the loss of tourism related	
	Cosmos Cavaleros)	employement in comparison to the potential jobs that may be created during the life time of the	
		mine should have been included in the study.	
22/10/2014	Werksmans Attorneys Justin Truter	8.7 Considering the fact that the growth of the tourist industry is recognised as a sustainable	Note that this report relates to the unlawful road
Letter	(on behalf of Calshelf	economic activity in both the relevant MunicipalIntegrated Development Plan and Spatial	construction activities. The proposed Meletse Iron Ore
	Investments (Pty) Ltd,	Development Framework, the level of information on this alternative land use and impact on	Project and impact associated therewith form part of the
	171, 172 173	this industry is entirely inadequate to permit a proper consideration of the socio- economic	Scoping and EIA processes followed.
	("Calshelf") (Mr	impact and the need and desirability of the activities applied for.	
	Cosmos Cavaleros)		
22/10/2014	Werksmans Attorneys Justin Truter	9. The culpability of Aquila and its directors and the appropriate sanctions/ remedies:	Your concerns are acknowledged and form part of this
Letter	(on behalf of Calshelf	and the state of t	Section 24G EIR that will be submitted to LEDET.
	Investments (Pty) Ltd,	9.1 As we have already stated, many of our clients' concerns, expressed in previous letters have	OSS.S. 2.6 Entitle tim 50 dubinition to EEDET.
	171, 172 173	not been adequately addressed, if at all.In certain respects the EAP states simply in the	Refer also to response above and responses to
	171, 172 179	"Comments and Responses" table that "Your concerns are acknowledged and form part of this	previous comments made in this regard.
		Comments and responses table that four concerns are acknowledged and form part of this	previous comments made in this regard.



labalf"\ /\/\/	I	Section 24C EID that has been submitted to LEDET! We submit that this is not an extra relativistic		
Ishelf") (Mr mos Cavaleros)		Section 24G EIR that has been submitted to LEDET." We submit that this is not an adequate response and fails entirely to engage with the comments. In any event, the statement is		
		incorrect in that the final 24G report does not include reference to certain of the comments		
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comono Attornovo Luct	atio Trutor			Your concerns are acknowledged and form part of this
•	Still Hutel	·		Section 24G EIR that will be submitted to LEDET.
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	sun truter			Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
				Section 24G EIN that will be submitted to LEDET.
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1105 Gavaleros)		The offissions by the EAF create further suspicion of bias of its part in layour of Aquila.		
ksmans Attornevs Just	stin Truter	9.4 It is a serious concern that Aquila and its consultants have engaged in "authorities meetings"		Your concerns are acknowledged and form part of this
•				Section 24G EIR that will be submitted to LEDET.
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		and ontone of required annumer contacts.		
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,	stin Truter	9.5 Considering the severity of the impacts caused by Aguila's unlawful conduct and their		Your concerns are acknowledged and form part of this
pehalf of Calshelf				Section 24G EIR that will be submitted to LEDET.
172 173		•		
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mos Cavaleros)				
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ksmans Attorneys Just	stin Truter	9.6 Section 24G(6) of NEMA provides as follows:		Noted
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172 173		a) The environmental management inspectors or the South African Police Services		
Ishelf") (Mr		Authority to investigate any transgressing in terms of this Act or any specific		
		,		
, ·		Environmental Management Act:		
mos Cavaleros)		Environmental Management Act; b) The National Prosecuting Authority's legal authority to institute any criminal prosecution "		
, ·		b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."		
, ·		b) The National Prosecuting Authority's legal authority to institute any criminal prosecution." 9.7 Subsection 7 provides as follows:		
, ·		<ul> <li>b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."</li> <li>9.7 Subsection 7 provides as follows:</li> <li>"If, at any stage aer the submission of an application in terms of sub-section 1, it comes to</li> </ul>		
, ·		<ul> <li>b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."</li> <li>9.7 Subsection 7 provides as follows: "If, at any stage aer the submission of an application in terms of sub-section 1, it comes to attention of the Minister, Minister for Mineral Resources or MEC, that the applicant is under</li> </ul>		
, ·		<ul> <li>b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."</li> <li>9.7 Subsection 7 provides as follows:         <ul> <li>"If, at any stage aer the submission of an application in terms of sub-section 1, it comes to attention of the Minister, Minister for Mineral Resources or MEC, that the applicant is under criminal investigation for the contravention of or failure to comply with section 24F(1) or section</li> </ul> </li> </ul>		
, ·		b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."  9.7 Subsection 7 provides as follows:  "If, at any stage aer the submission of an application in terms of sub-section 1, it comes to attention of the Minister, Minister for Mineral Resources or MEC, that the applicant is under criminal investigation for the contravention of or failure to comply with section 24F(1) or section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No 59 of 2008), the		
, ·		b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."  9.7 Subsection 7 provides as follows:  "If, at any stage aer the submission of an application in terms of sub-section 1, it comes to attention of the Minister, Minister for Mineral Resources or MEC, that the applicant is under criminal investigation for the contravention of or failure to comply with section 24F(1) or section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No 59 of 2008), the Minister, Minister responsible for Mineral Resources or MEC may defer a decision to issue an		
, ·		b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."  9.7 Subsection 7 provides as follows:  "If, at any stage aer the submission of an application in terms of sub-section 1, it comes to attention of the Minister, Minister for Mineral Resources or MEC, that the applicant is under criminal investigation for the contravention of or failure to comply with section 24F(1) or section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No 59 of 2008), the Minister, Minister responsible for Mineral Resources or MEC may defer a decision to issue an environmental authorisation until such time that the investigation is concluded and -		
, ·		b) The National Prosecuting Authority's legal authority to institute any criminal prosecution."  9.7 Subsection 7 provides as follows:  "If, at any stage aer the submission of an application in terms of sub-section 1, it comes to attention of the Minister, Minister for Mineral Resources or MEC, that the applicant is under criminal investigation for the contravention of or failure to comply with section 24F(1) or section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No 59 of 2008), the Minister, Minister responsible for Mineral Resources or MEC may defer a decision to issue an		
st 1 s s s s s s s s s s s s s s s s s s	ehalf of Calshelf tments (Pty) Ltd, 172 173 shelf") (Mr nos Cavaleros)  smans Attorneys ehalf of Calshelf tments (Pty) Ltd, 172 173 shelf") (Mr nos Cavaleros)  smans Attorneys ehalf of Calshelf tments (Pty) Ltd, 172 173 shelf") (Mr nos Cavaleros)  smans Attorneys ehalf of Calshelf tments (Pty) Ltd, 172 173 shelf") (Mr nos Cavaleros)  smans Attorneys ehalf of Calshelf tments (Pty) Ltd, 172 173 shelf") (Mr nos Cavaleros)  smans Attorneys ehalf of Calshelf tments (Pty) Ltd, 172 173 shelf") (Mr nos Cavaleros)	chalf of Calshelf tments (Pty) Ltd, 172 173 Shelf") (Mr nos Cavaleros)  Smans Attorneys chalf of Calshelf tments (Pty) Ltd, 172 173 Shelf") (Mr nos Cavaleros)  Smans Attorneys chalf of Calshelf tments (Pty) Ltd, 172 173 Shelf") (Mr nos Cavaleros)  Smans Attorneys chalf of Calshelf tments (Pty) Ltd, 172 173 Shelf") (Mr nos Cavaleros)  Smans Attorneys chalf of Calshelf tments (Pty) Ltd, 172 173 Shelf") (Mr nos Cavaleros)  Smans Attorneys chalf of Calshelf tments (Pty) Ltd, 172 173 Shelf") (Mr nos Cavaleros)  Smans Attorneys chalf of Calshelf tments (Pty) Ltd, 172 173 Shelf") (Mr nos Cavaleros)  Smans Attorneys chalf of Calshelf tments (Pty) Ltd, 172 173 Shelf") (Mr nos Cavaleros)	at all - for instance, the EAP does not refer anywhere in the report to the fact that Aquila's activities were also in contravention of its prospecting rights. We submit that it is incumbent on the EAP to point this out to the environmental authority as it renders Aquila's explanation for its unlawful activities under NEMA totally implausible. The culpability of Aquila and its directors is a relevant factor which the environmental authority must have regard to in deciding whether to grant or refuse the section 24G authorisation. It is also an important factor in determining the fine amount under 524 G.  Justin Truter  9.2 For the reasons expressed in our previous letters, and on the further grounds expressed below, our clients remain firmly of the view that the application for the ex post factor rectification of unlawful commencement with certain activities identified under NEMA, which has resulted in environmental degradation as significant as that caused by Aquila, should never be condoned or countenanced. Our client maintains that Aquila's directors carried out the activities wilfully and in flagrant disregard of al teacy for our country's laws, including NEMA. There is nothing in the amended report to dispel this view and the EAP's explanation for Aquila's unlawful conduct remains entirely implausible.  9.3 Although the final S 24G report now confirms our client's concerns that Aquila has continued with its unlawful uroad construction, which included illegal blasting and the destruction of protected tree species, until as recently as January 2014, 6 the EAP does not express any condemnation of such continued unlawful action in the report. Again it is pointed out that the final S 24G report fails to record that Aquila prospecting right and EMP prohibited blasting. The omissions by the EAP create further suspicion of bias on its part in favour of Aquila.  9.4 It is a serious concern that Aquila and its consultants have engaged in "authorities meetings" with LEDET, DMR and DWA as recently as Aquila's unlawful	at all - for instance, the EAP does not refer anywhere in the report to the fact that Aquila's activities were also in contravention of its prospecting rights. We built that it is incumbent on the EAP to point this out to the environmental authority as it renders Aquila's explanation for its unlawful activities under NEMA totally implausible. The culpability of Aquila and its directors is a relevant factor which the environmental authority are regard to in deciding whether to grant or refuse the section 24G authorisation. It is also an important factor in determining the fine amount under 524 G.  Justin Truter  9.2 For the reasons expressed in our previous letters, and on the further grounds expressed below, our clients remain firmity of the view that the application for the ex post factor rectification of unlawful commencement with certain activities identified under NEMA, which has resulted in environmental degradation as significant as that caused by Aquila, should never be condoned or countenanced. Our client maintains that Aquila's directors carried out the activities willfully and in flagrant disregard of at least five four country's laws, including NEMA. There is nothing in the amended report to dispel this view and the EAP's explanation for Aquila's unlawful conduct remains entirely implausible.  9.3 Although the final S 24G report now confirms our client's concerns that Aquila has continued with its unlawful road construction, which included illegal blasting and the destruction of protected tree species, until as recently as January 2014,6 the EAP does not express any condemnation of such continued unlawful action in the report. Again it is pointed out that the final S 24G report fails to record that Aquila's prospecting right and EMP prohibited blasting. The omissions by the EAP or create further suspicion of bias on its part in favour of Aquila.  9.4 It is a serious concern that Aquila and its consultants have engaged in "authorities meetings" with LEDET, DMR and DWA as recently as August 2014 yet, t



		respect of such contravention or failure has been instituted, or  9.7.3 The applicant concerned has been convicted by a court of law of an offence in respect of such contravention or failure and the applicant has in respect of the conviction exhausted all the recognised legal proceedings pertaining to appeal or review."	
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	<ul> <li>9.8 We maintain that this is a matter which is crying out for criminal prosecution of Aquila and its directors and would furthermore call on LEDET to invoke the provisions of section 24N(8) of NEMA which provides as follows:</li> <li>"Notwithstanding the Companies Act, 2008 (Act No. 71 of 2008), or the Close Corporations Act, 1984 (Act No. 69 of 1984), the directors of a company or members of a close corporation are jointly and severally liable for any negative impact on the environment, whether advertently or inadvertently caused by the company or close corporation which they represent, including damage, degradation or pollution."</li> </ul>	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	9.9 As we have stated, the final S 24 G report still fails to draw the authority's attention to the fact that Aquila's unlawful activities were in contravention of its prospecting rights, which gives the lie to the explanation provided by the EAP for Aquila's unlawful activities  "Aquila Steel indicated that on commencement of these unlawful activities, the company was not aware that it should have complied with other environmental legislative requirements as the applicant had already obtained authorisation from the Department of Mineral Resources".	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer also to response above and responses to previous comments made in this regard.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	<ul> <li>9.10 The "authorisation" referred to are the prospecting rights granted under the Mineral and Petroleum Resources Development Act, 2002 ("MPRDA"). These prospecting rights did not, however, authorise the activities carried out by Aquila which were in fact also in direct contravention of these prospecting rights (and the Prospecting Works Programme and Environmental Management Programme attached to these rights (refer to paragraph C2.15 of the EMP), in the following manner:</li> <li>9.10.1 The prospecting rights permitted the construction of 1.6km - 3km of road in order to access ten drilling sites whereas Aquila constructed in excess of 33km of roads and cleared 200 drilling sites for the purposes of prospecting. These unlawful activities commenced in September 2007 and continued even after the section 24G NEMA application had been submitted, until as recently as January 2014.</li> <li>9.10.2 The unlawful clearing and road construction involved extensive bulldozing and destruction of various protected tree species which was in further violation of Aquila's prospecting right and EMP (refer to paragraph C2.16 of the EMP), let alone in violation of NEMA and at least 5 other laws. The unlawful road construction also involved extensive blasting and removal of topsoil, again contrary to Aquila's own prospecting rights and Prospecting Works Programme and Environmental Management Programme (refer to paragraphs C6.3 and C6.4 which prohibit blasting and C6.6.1 which prohibits the removal of topsoil).</li> <li>9.10.3 Aquila's contention that its unlawful activities were an oversight and were based on an assumption that their prospecting rights permitted such activities, also conveniently ignores the provisions contained in the Prospecting EMP which expressly state (in paragraph A6) that "Compliance with the provisions of the (MPRDA) and its Regulations does not necessarily guarantee that the applicant is in compliance with other Regulations and legislation. Other legislation that may be immediately applicable inc</li></ul>	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer also to response above and responses to previous comments made in this regard.



	10.4 In payagraph E of the proposing EMD o Mr. II. Van Deventer on behalf of Aprilla	Volum concerns are columniated and forms and the
9.	declares under oath that the information furnished in the EMP is "true, complete and correct", undertakes to implement the measures contained in the EMP and records that he understands that the undertaking is legally binding and that failure to give effect to the undertaking will render him liable to prosecution in terms of sections 98(b) and 99(1)(g) of the MPRDA. As we have stated, Aquila has acted in flagrant violation of its prospecting rights and prospecting EMP, with significant adverse impacts on the environment and on various parties' rights and interests and Mr Van Deventer (and the directors of Aquila) are liable for prosecution.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer also to responses to previous comments made in this regard.
9.	.10.5 As we have motivated, it is incumbent on the EAP to bring these facts to the attention of the environmental authority in the body of the S 24 G EIR as it goes to the culpability of Aquila and its directors yet the final 524 G EIR fails to do so.	
9.	10.6 We maintain that Aquila's contention that its illegal clearing and road construction activities came about as a result of ignorance and an oversight is a bald lie. The amended section 24G NEMA application confirms that Aquila continued with their illegal road clearing activities even after they became aware that this was illegal for want of environmental authorisation (amongst other statutory approvals) until as recently as January 2014.	
9.	Our clients maintain that the true reason for the Aquila's unlawful conduct is that they were under pressure to conduct their prospecting activities and, in the knowledge that it may take at least six months to a year before environmental authorisation could be granted for the clearing of sensitive vegetation, removal of protected tress and construction or expansion of the road, they wilfully elected to continue unlawfully without the requisite approvals. Having caused extensive and significant environmental damage, in wilful contravention of NEMA, the MPRDA, the National Forests Act, 1998 ("NFA"), the National Water Act, 1998 ("NWA"), the National Environmental Management: Protected Areas Act, 2003 ("NEMPAA"), the National Environmental Management: Biodiversity Act,2004 ("NEMBA") and the National Heritage Resources Act, 1999 ("N H RA"), and with cavalier disregard for sections 15 and 31 of the Constitution of the Republic of South Africa, 1996 ("the Constitution"), Aquila now audaciously seeks to have its unlawful activities regularised through an ex post facto application for environmental authorisation in which it presents the road as a fait accompli and its company as an innocent and ignorant party. Furthermore, Aquila has had the benefit of this unlawful road and the 200 drill sites that were unlawfully cleared during its prospecting phase and is reliant on the unlawful road as an essential component of its proposed mining activities for which a mining right application is currently pending before the mineral authority.	
9.11	There is nothing in the amended report that dispels these views which are very pertinent to the consideration and determination of the section 24G NEMA application (and fine amount) by the environmental authority. Once again our clients would call on the relevant environmental, mineral, water and heritage authorities to each invoke the strictest criminal and civil sanctions under the laws that they administer.	
9.1	As we have stated previously, had Aquila complied with the requirements of the environmental laws and planning and implementing their activities, the environmental and social costs could have been avoided or prevented, or minimized and – where appropriate - off-set or compensated timeously. Moreover, robust monitoring and\ adaptive management requirements could have further reduced harm.	



22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf	Justin Truter		ure to consider and assess "Need and desirability" and the "Best practicable ronmental option" ("BPEO"):	Your concerns are acknowledged and form part of the Section 24G EIR that will be submitted to LEDET.
	Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)		10.1	It is submitted that there is a wholesale failure in the final section 24G NEMA EIR to consider and assess the "need and desirability" of the activities for which authorisation is sought, which necessitates a consideration and comparative assessment of alternatives, including the no-go option. The final 524 G EIR also fails entirely to present any assessment or views in respect of what would represent the BPEO. We submit that the activities for which authorisation is sought will manifestly not represent the BPEO and that the BPEO will be the immediate rehabilitation of the affected environment.	Note that this report relates to the unlawful roaconstruction activities (historical activities). The proposed Meletse Iron Ore Project and impalassociated therewith form part of the Scoping and Exprocesses followed, to which need and desirability applies.
			10.2	The concept of "need and desirability" relates to, amongst others, the nature, scale and location of activities for which authorisation is sought, as well as the wise use of land.	
			10.3	The Department of Environmental Affairs' Guideline on Need and Desirability, published in GNR 891 on 20 October 2014 provides, inter alia, as follows:	
				"While essentially, the concept of "need and desirability" can be explained in terms of the general meaning of its two components in which need primarily refers to time and desirability to place (i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed?), "need and desirability" are interrelated and the two components collectively can be considered in an integrated and holistic manner. In order to properly interpret the EIA Regulations' requirement to consider "need and desirability", it is necessary to tum to the principles contained in NEMA, which serve as a guide for the interpretation, administration and implementation of NEMA and the EIA Regulations. With regard to the issue of "need", itis important to note that this "need" is not the same as the "general purpose and requirements of the activity. While the "general purpose and requirements" of the activity might to some extent relate to the specific requirements, intentions and reasons that the applicant has for proposing the specific activity, the "need" relates to the interests and needs of the broader public. In this regard the NEMA principles specifically inter alia require that environmental management must:  "place people and their needs at the forefront ofits concern and equitably serve their interests;  be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the	
				<ul> <li>best practicable environmental option;</li> <li>pursue environmental justice "so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person";</li> <li>ensure that decisions take "into account the interests, needs and values of all interested and affected parties"; and</li> </ul>	
				<ul> <li>ensure that the environment is "held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage".</li> </ul>	
				The consideration of "need and desirability" in EIA decision-making therefore requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest. The government decision- makers, together with the environmental assessment practitioners and planners, are therefore accountable to the public and must serve their social, economic and ecological needs equitably. Ultimately development must not exceed ecological limits in order to	



		measured against the short-term and long-term public interest in order to promote justifiable social and economic development - i.e. ensuring the simultaneous achievement of the triple bottom-line. Considering the merits of a specific application in terms of the need and desirability considerations, it must be decided which alternatives represent the "most practicable environmental option". which in terms of the definition in NEMA and the purpose of the EIA Regulations are that option that provides the most benefit and causes the least damage to the environment as a whole, at a cost acceptable to society, in the long-term as well as in the short-term.  (Own emphasis)	
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	10.4 We submit that the failure to address need and desirability in the final section 24G EIR is a fatal flaw. The application must be refused on this basis alone. Alternatively, the final report must be referred back to the EAP to supplement with express reference to the requirements for addressing need and desirability as set out in the DEA's guideline and this amended report must be circulated for further public comment.	Refer to response above.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr Cosmos Cavaleros)	<ul> <li>11. Omissions in the Section 24 G EMPR:</li> <li>11.1 We previously noted that considering the extent of the impacts that have been caused by Aquila's unlawful activities and the fact that the amended section 24G EIR recognised that various impacts are irreversible and are incapable of remediation or mitigation, the draft EMPR is a scant consolation to our clients.</li> <li>11.2 On consideration of the final S24G EMPR, and the responses provided by the EAP, we submit that our concerns have not been adequately addressed and the EMPR is still lacking in numerous respects.</li> </ul>	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer also to responses to previous comments made in this regard.
		The final S24 G EMPR again makes reference to the development of a rehabilitation plan, which does not form part of the EMPR currently under consideration. According to the EMPR the rehabilitation plan, will be a detailed plan with regard to the rehabilitation of the gravel roads which must be developed by a rehabilitation specialist at the South African Council for Natural Scientific Profession. The rehabilitation plan is to include detail on soil surface and usage; vegetation establishment; most suitable plants and seed mix; end land use requirements; long term erosion prevention; confirmatory monitoring and security measures.	Refer to responses to previous comments made in this regard.
		According to response table in the final S24G EIR, an authorities meeting was held with LEDET on 5 August 2014, and a request was made by LEDET to assess the extent to which the existing roads can be utilised. The purpose of this is to prevent unnecessary road construction on the site, should mining be permitted. This information will apparently be provided with the draft EIR to the Meletse Iron Ore Project. Furthermore, according to the EAP, in the event that the application for the mining right and the Environmental Authorisation are not successful, the development of a detailed rehabilitation plan will commence immediately. According to the EAP, the rehabilitation plan will include detailed specialist inputs and public consultation.	
		We have not been provided with any more information regarding the meeting with LEDET on 5 August 2014 and in the interim we request a copy of the minutes of this meeting to be provided to our clients.	Your requests are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET. LEDET should indicate whether the minutes may be made available.



		Furthermore, we submit that as far as the impacts are capable of mitigation or remediation, they should be implemented immediately to ameliorate against further impacts while the various statutory processes are underway and pending the outcome of any criminal prosecution and that this should be directed by LEDET in accordance with section 28(4) of NEMA.  11.7 We furthermore submit that the development of a rehabilitation plan cannot be subject to the approval of the mining right under the Mineral and Petroleum Resources Development Amendment Act, 2008 ("MPRDAA") and that a rehabilitation plan should already be developed in terms of section 24N of NEMA, in accordance with section 24G (I)(ee) which must be circulated for public and stakeholder comment before environmental authorisation is granted. The current remedial measures in the EMPR are vague and a detailed remedial plan as proposed is vital.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.  Refer to responses to previous comments made in this regard.
		As previously noted, the proposed mitigation measures in respect of the anthropological impacts as recorded in the EMPR, fails to deal with the essential question of how Aquila will maintain the integrity of Madimatle and the caves and the mitigation measures as proposed by the anthropologist are of short term effect. According to the EAP, a future management plan for the cave will form part of the EIA documentation to be submitted for the proposed mining and related activities, should the application for a mining right and environmental authorisation be permitted.	The wording used by the EAP:  "A future management plan for the cave will form part of the environmental authorisation documentation for the proposed mining and related activities (EIA process), and will need to be developed and implemented as part of potential future mining activities, should the applications for a mining right and environmental authorisation be permited."
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173	11.9 We submit that the unlawful roads and the impacts created thereby are irreconcilable with the preservation of the spiritual, cultural heritage and religion importance of the Meletse Mountain. The two are mutually exclusive.	Refer to responses to previous comments made in this regard.  Your concerns are acknowledged and form part of this
	("Calshelf") (Mr Cosmos Cavaleros)	11.10 We have already recorded in our previous comments that the sections of the EMPR dealing with anthropological impacts are fatally flawed as it does not view the heritage resource holistically and focuses only on the caves and the "surrounding landscape". The anthropologist responded that:-  "In the oral history and written resources Madimatle is mentioned with reference to the cave, the actual site of cosmological engagement, and not the Mountain. In my report it is mentioned that the cave has a number of entrances and these may be elsewhere on the Mountain. Also, the harvesting of ethno- botanical material cannot be limited to the cave alone but the entire mountain."	Section 24G EIR that will be submitted to LEDET.
		11.11 This is patently not an adequate response.	
		11.12 Considering the extent of the impacts that have been caused by Aquila's unlawful activities and the findings in the final section 24G EIR that various impacts are irreversible and are incapable of remediation or mitigation, the amended EMPR is scant consolation to our clients.	
22/10/2014	Werksmans Attorneys Justin Truter	12. Grounds on which the EAP should be disqualified:	Refer to responses to previous comments made in this
Letter	(on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr	In our previous comments we commented that the EAP has not met the required levels of objectivity and independence required under NEMA and that the EAP should be disqualified from pursuing the applications for environmental authorisation under section 24 and 24G of NEMA any further.	regard.  Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
	Cosmos Cavaleros)	12.2 We based this contention on, inter alia, the fact that the EAP has misrepresented many true facts and that there are material omissions in relation to Aquila's contravention of its prospecting rights, which we raised in our objection to the mining right application, submitted by the EAP on behalf of Aquila.	



		12.3 The response to these concerns in the final S24G EIR is unsatisfactory as the EAP merely maintains that there is no legal restriction on work simultaneously conducted on different projects and that our comments are acknowledged.	Refer to responses to previous comments made in this regard.  Your concerns are acknowledged and form part of this
		We furthermore commented that the lack of objectivity and independence of the EAP was confirmed at the information session held at the 31st of May 2014 at the Graceland Church in Thabazimbi. It remains our opinion that the reviewer of the amended section 24 G EIR and EMPR, Mr Jacs van Rooy of Shangoni, conducted the meeting in an overtly hostile manner which we maintain was not conducive to effective public participation.	Section 24G EIR that will be submitted to LEDET.
		12.5 We would ask that a transcript of the meeting, which according to the EAP it has reviewed and which it contends is evidence that Mr van Rooy was only maintaining order, be provided to us.	An electronic copy of the recording of the meeting can be made available to Werksmans Attorneys.
		Finally, in both the SIA report and the Economic study, the authors emphasise the importance of trust and a good working relationship between Aquila and stakeholders in order for this project to succeed. We submit that considering the hostility of the EAP and Aquila's clear disregard for our country's laws, there is clear and justified mistrust in both the EAP and the management of Aquila.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
22/10/2014 Letter	Werksmans Attorneys (on behalf of Calshelf Investments (Pty) Ltd, 171, 172 173 ("Calshelf") (Mr	CONCLUSION:  13. The final 524 G EIR does not adequately engage with or address the majority of our clients' concerns expressed in previous letters.	Your concerns are acknowledged and form part of this Section 24G EIR that will be submitted to LEDET.
	Cosmos Cavaleros)	14. Our clients' maintain that there are fundamental flaws in the application which are described in more detail above and in our previous letters of 11 April 2014 and 15 August 2014 which, together with Aquila's wilful and unlawful conduct and the significant environmental degradation which they have caused through this, militates strongly against ex post facto environmental authorisation in terms of section 24G of NEMA. To grant environmental authorisation in these circumstances will create a perverse incentive to break the law, will create a precedent for abuse of section 24G, is a disincentive to compliance and undermines good environmental governance.	
		15. Instead, we maintain that the correct decision is to refuse environmental authorisation and direct the rehabilitation of the affected environment to its previous state as far as possible, alternatively to suspend the application for rectification in accordance with section 24G (6) and (7) of NEMA until such time as any criminal prosecution, to be brought by the environmental, minerals and water authorities, has been concluded.	



## 6.3.9 Conclusion of the PPP

In conclusion, the Public Participation process followed was conducted in terms of the requirements as set out in the EIA Regulations, 2010. Opportunity was provided to IAPs to raise comments and concerns with regard to the activity (i.e. construction of roads for prospecting purposes), in the form of registration and response forms, a formal Public Meeting, an additional Information Session, two Community Meetings and three review periods on the draft Section 24G EIR. Furthermore, comments received from IAPs in the form of letters or e-mails have been incorporated into this Section 24G EIR.



## 7. CONCLUSION

This Section 24G Application has been carried out in accordance with the EIA Regulations R.543 (in terms of the National Environmental Management Act, 1998) and EIA Regulations R.544 / R.545 / R.546 of the National Environmental Management Amendment Act (Act No. 62 of 2008).

Table 51 provides a summary of impacts of the unlawful road constructions and associated activities. Details on such impacts are discussed in Part 4 of this Section 24G EIR, with further discussions for suitable mitigation measures.

Mitigation measures as proposed within this report were developed in consideration of the significance of impact and in consultation with the various technical specialists. Not all mitigation measures will necessarily result in a reduction in impact significance, as impact reduction is largely influenced by the reversibility of the impact. Of note is the following:

Cultural Heritage: The most significant impact relates to the disturbance to Madimatle and its surrounding brought about by the prospecting and unlawful road construction activities that have always been known as a site of tranquillity and quietness and a fitting environment to communicate with the ancestral world. The healers do not trust Aquila Steel due to the interventions and disturbances that have already transpired. Mitigation measures as suggested transpired through conversations held between the anthropologist and traditional healers, and include the declaration of Madimatle as a heritage site, management of the site (e.g. access control), constructing of a waiting and preparation area at the cave entrance, recruitment of the original community for proposed measures and compensation of relocated original residents. Suggested measures must be further investigated by Auila Steel and will also require further negotiations with the healers. In finalising suitable mitigation, the preservation of the cultural heritage must remain a priority. The anthropologist indicated that once all the representatives of the healers are accommodated by the mine by means of site and other meetings, during which their fears are properly addressed, and they are kept up to date with continuous developments around Madimatla, and as long as the lines of communication are kept open and maintained on a regular basis, the risk rating might be reduced further.

Flora: The significance of the impact associated with vegetation clearance for the unlawful road construction is high and irreversible owing to the high species richness in the area and the unique floristic composition. Although the main impact has more relevance to fragmentation and displacement of biota during operation, it is near-impossible to revert the existing roads back to a composition that is reminiscent of Protea caffra – Loudetia flavida savannoid grassland. Mitigation measures focus on minimising the extent of further disturbance, and the development of a rehabilitation plan in consultation with flora and fauna specialists to investigate ways to re-establish indigenous vegetation.

Social: The activities that took place intensified some of the social impacts, especially those related to the relationship between the mine and the affected communities. From a social perspective the greatest risks are the presence of Madimatle that have high cultural significance for certain indigenous groups



(refer previous discussions). Other impacts include the change in sense of place and the negative effect that it can have on the tourism industry. Aquila Steel will need to make a concerted effort to gain a social license to operate. It will not be easy to gain the trust of the community based on their track record. Aquila Steel will need to be more transparent about their action and should make an effort to share requested information where possible. They should conduct themselves in a neighbourly way and demonstrate that they respect the other stakeholders in the area. Mitigation measures include the implementation of a community relations programme with the input of the community and appointing a community liaison officer. The impact on the social license to operate is reversible over time, but with great effort.

Visual: Several receptors are located in the foreground and middle ground of the project site. Due to the height of the project site, most of the receptors will have a clear line of sight of the prospecting roads. The specialist did indicate that this impact is recoverable and it is foreseen that the original landscape form could be regained if the prospecting roads are rehabilitated. In considering rehabilitation, methodologies must be development in consultation with rehabilitation, fauna and flora specialists.

## **Concluding statement:**

Due to the ecologically and culturally unique location of the project site, a number of significant impacts associated with the unlawful road construction have been identified as discussed within this Section 24G EIR. Mitigation measures will reduce some of the significance, and can even result in reversibility of certain impacts. However, other impacts, e.g. impacts on the high species richness in the area and the unique floristic composition is likely to be irreversible.

Of further importance is the close proximity of the site to the Marakele National Park and its presence within the Waterberg Biosphere Reserve. The contravened site lies within the "Buffer" and "Transition 1" Biosphere Zones and the "Zone 1" and "Zone 2" Environmental Management Zone(s). In addition, the contravened site is located within a Critical Biodiversity Area (CBA) 1, as per the Limpopo Conservation Plan.

The LEDET, in their review of this section 24G rectification application, need to take cognisance of the fact that a mining right application has been lodged by Aquila Steel for the area on which prospecting activities (and the associated unlawful road construction) have occurred, as this may influence the rectification measures and applicable time-frames.

In the event that the mining right application and environmental authorisation for the proposed Meletse Iron Ore Project is not successful, the development of a detailed rehabilitation plan should immediately commence.



In the development, approval and implementation of such a rehabilitation plan, the following additional measures and communication are recommended:

- Detailed specialist inputs as reflected in the mitigation measures;
- Public consultation to ensure concerns from IAPs are adequately incorporated in both the technical design and implementation of such rehabilitation plan;
- Submission of the plan to LEDET for approval (prior to implementation), including detailed rehabilitation budget linked to the implemention timeline and proof of the financial instrument applied to secure the funds;
- Bi-annual rehabilitation progress reports to be submitted to LEDET;
- Post-rehabilitation monitoring reports to be submitted annually to the LEDET for a period as proposed by the rehabilitation specialists;
- Rehabilitation progress reports and post-rehabilitation monitoring to be undertaken by an independent specialist;
- Feedback to IAPs on progress with regards to rehabilitation (e.g. copies above reports); and
- Any other measures that may be imposed by LEDET.



**Table 51: Summary of impacts** 

Potential Impact		Environmental Significance Pre Mitigation			Environmental Significance Post Mitigation		
	P <sup>50</sup>	M <sup>51</sup>	S <sup>52</sup>	Р	M	S	
Air quality							
Dust fallout impacts relate to nuisance impacts. PM <sub>2.5</sub> and PM <sub>10</sub> impacts can in general be of concern due to their direct health impact potentials.	5	1	L	5	1	L	
Aquatic and surface water							
The gravel roads cross the natural drainage lines, causing an impact on surface water quality and surface water flow patterns. Siltation and sedimentation into rivers lead to loss of fish habitats and fish biodiversity.	4	2	М	4	1	L	
Removal of riparian vegetation during road construction	4	2	M	4	2	М	
Alteration to the hydrology/geomorphology of the mountain spring	2	1	L	2	1	L	
Cultural Heritage							
Anthropology – Madimatla Cave <sup>53</sup>	5	5	Н	5	4	H <sup>54</sup>	
Fear that the cave and the landscape will 'suffocate' in the advance of the harsh mining developments around Madimatla. As per the healers, interventions and disturbances have already transpired around Madimatla, as given below:							
The noise levels of exploration vehicle traffic have concerned them for some time;							
• The impact of the road infrastructure caused by the exploration vehicles was not anticipated by people who have utilised the natural resources around Madimatla for decades;							
• The pre-mining exploration has introduced 'strangers' to the area who forage around Madimatla for 'firewood'; and							
• Aquila Steel proceeded with construction of the perimeter fence and access gate without consultation of the traditional healers.							
Archaeological Heritage		Н			L		
Heritage sites on the contrived sites include Perreira Grave, Gatkop Cave, Randstephne Homestead, Labourer's Cemetery, early nineteenth century Iron Age period sites that include 'mines' (3?), 'smelting sites' (1), 'animal enclosures' (4?) and 'living areas' (2?). Current impacts relate to neglect and prospecting roads passing through or near some of the sites.							

<sup>50</sup> Probability51 Magnitude

The anthropologist indicated that the risk rating might be reduced once all the representatives of the healers are accommodated by Aquila Steel by means of site and other meetings, during which their fears are properly addressed and they are kept up to date with continuous developments around Madimatla, and as long as the lines of communication are kept open and maintained on a regular basis.



<sup>52</sup> Severity

<sup>53</sup> Cave is also known as Gatkop Cave

Potential Impact		mental Si Pre Mitigat	gnificance ion	Environmental Significance Post Mitigation			
	P <sup>50</sup>	M <sup>51</sup>	S <sup>52</sup>	Р	M	S	
Palaeontology Heritage Palaeontology of Gatkop Cave site: Several dolomitic breccia units of various ages, degrees of cementation and sedimentary facies are exposed within the cave. The site is situated some four kilometres SSW of the main iron ore prospecting area and over 600 m lower in elevation.	2	2	L	2	2	L	
Economic							
The creation of roads would have created an economic value add at the construction phase. From desk-top research it appears that there is little scientific evidence to support that blasting could have impacted the breeding productivity of game in the area.		Positive			Positive		
Fauna							
Habitat transformation due to road construction.	3	4	Н	3	3	М	
Use of roads creating noise disturbance.	3	3	М	2	2	L	
Use of roads causing road mortalities.	3	3	М	2	2	L	
Outside lighting could attract animals and lead to disorientation and collision with structures.	2	2	L	2	2	L	
Bats							
Reduction in population size of species roosting in Gatkop cave due to collisions with vehicles (increased vehicular activity at night).	2	2	L	1	2	L	
Removal of natural vegetation during road construction (clearance of 33 ha of natural vegetation), thereby incurring losses to foraging habitat and prey base.	2	2	L	2	2	L	
Blasting may induce rock falls within the cave that compromises the roosting space and/or kills roosting bats. Or blasting may be a disturbance to the bats roosting in the cave, to the degree that it may reduce their survival or cause them to abandon the roost.	4	1	L	1	1	L	
Cape Vulture							
Loss of foraging due to land clearance.		Low			Low		
Air blast overpressure caused by civil blasting activities.		Low			Low		
Flora							
Loss of range-restricted habitat and increased fragmentation of sensitive communities and threatened plant species (pertaining to open <i>Protea caffra – Loudetia flavida</i> savannoid grassland on mountain plateaus).	5	5	Н	5	5	Н	
Loss of floristic diversity and invasion by alien/invader taxa.	3	3	М	2	2	L	



Potential Impact		mental Si Pre Mitiga	gnificance tion	Environmental Significand Post Mitigation			
	P <sup>50</sup>	M <sup>51</sup>	S <sup>52</sup>	Р	M	S	
Geohydrology							
The stripping and stockpiling of topsoil and subsoil from the infrastructure surface areas.	2	2	L	2	2	L	
Blasting by means of nitrate based explosives may have significant impacts on groundwater quality.	3	1	L	3	1	L	
Geology							
Removal of the surficial/bedrock deposits through removal/excavation/civil blasting that may lead to an impact on the transmissivity and hydraulic conductivity of rock; stability of rock; erosion; and loss of geological resource.	2	2	L	2	2	L	
Land use and capability							
The land use and capability where the gravel roads have been established has been altered from game farming to now being	5	2	М	5	2	М	
used as access roads to the prospecting site.			IVI	3		IVI	
Noise							
Noise disturbance caused by civil blasting.	4	2	М	1	1	L	
Noise disturbance caused by road grading and use of roads.	4	1	L	4	1	L	
Permits/Licenses triggered							
Abstraction of water – No water use license required, but water use registration is required.			Cor	mply			
Construction of gravel roads through drainage lines.	1	Non-complia	ance		Comply		
Social							
The visual impacts were not mitigated sufficiently and it has changed the sense of place.	5	5	Н	5	4	H <sup>55</sup>	
There was a breakdown in the trust relationship between Aquila Steel and the communities.							
This event was the catalyst for Aquila Steel to lose its social license to operate.							
·							
Soil							
Soil erosion.	2	2	L	2	2	L	

<sup>&</sup>lt;sup>55</sup> This impact can be reversed at a high cost with a lot of effort that will result in further reduction of risk rating. Also refer to previous discussions under Cultural Heritage (Anthropologist).



Potential Impact		nmental Si Pre Mitigat	gnificance tion	Environmental Significa Post Mitigation		
	P <sup>50</sup>	M <sup>51</sup>	S <sup>52</sup>	Р	M	S
Loss of original soil cover.	2	2	L	2	1	L
Spillages during fuel handling (loading and offloading) activities are of small quantity (bulk storage of 1 000 liters).	3	2	М	1	1	L
Traffic						
The roads on-site are not a trip generator, but the activity for which the roads were constructed can generate external trips.	5	1	L	5	1	L
Vibration						<u> </u>
Civil blasting effects expected during road construction would have been ground vibration.	4	1	L	4	1	L
Visual						
Several receptors are located in the <i>foreground</i> and <i>middle ground</i> of the project site. The sensitive receptors in the <i>foreground</i> and <i>middle ground</i> of the generated viewshed represent mostly users of the road networks and several tourist facilities such as game farms and lodges. Due to the height of the project site, most of the receptors will have a clear line of sight of the prospecting roads	5	4	Н	5	4	H <sup>56</sup>
The specific soil type is not particularly prone to wind and water erosion, however, given the extreme slope of the site and the lack of compacted spoil areas resulted from the roads construction, several areas along the prospecting roads have already started to erode. In addition to the above, the prospecting roads have been cut into the mountainside to provide, in particular, sufficient passing facilities. This has created large sections of unsightly exposed rock faces.	5	4	Н	3	3	M
Dust caused by vehicles making use of the prospecting roads is expected to have a visual impact, especially where dust clouds extend above tree canopies and landscaping features	5	2	M	5	1	L

<sup>&</sup>lt;sup>56</sup> The signficance rating reflects if rehabilitation of the prospecting roads are not undertaken. It is foreseen that the original landscape form could be regained if the prospecting roads are rehabilitated. The visual impact will therefore be improved from a negative to a positive impact.

