



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

**BASIC ASSESSMENT REPORT
AND
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT
ZINOJU COAL (PTY) LTD: OLD BALGRAY COLLIERY ADIT
REFURBISHMENT PROJECT**

PART A: BASIC ASSESSMENT REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORISATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT: ZINOJU COAL (PTY) LTD

TEL NO: 034 212 1355

FAX NO: 034 212 1232

POSTAL ADDRESS: PO BOX 684, DUNDEE, 3000, SOUTH AFRICA

PHYSICAL ADDRESS: R33 GREYTOWN ROAD, INDUSTRIAL AREA, DUNDEE, 3000

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Zinoju Coal (Pty) Ltd
Part A: Basic Impact Assessment Report
Old Balgray Colliery Adit Refurbishment Project

03 July 2020

DRAFT FOR PUBLIC COMMENT

DMR Ref: KZN 30/5/1/2/2/301 MR



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Report Sign-Off			
Name	Designation	Signature	Date
Trevor Hallatt	EAP Pr.Sci.Nat.		2020/07/03
Kerry Fairley	Director Pr.Sci.Nat		2020/07/03

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ACRONYMS AND ABBREVIATIONS

Abbreviation	Explanation
BID	Background Information Document
CBA	Critical Biodiversity Area
DMR	Department of Mineral Resources
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMC	Ecological Management Class
EMPr	Environmental Management Programme
ESA	Ecological Support Area
GHG	Greenhouse Gases
GNR	Government Notice
IAP	Interested and Affected Party
LOM	Life of Mine
Mtpa	Million tons per annum
LSA	Late Stone Age
mamsl	Metres above mean sea level
Mbs	Metres below surface
MPRDA	Mineral and Petroleum Resources Development Act
MSA	Middle Stone Age
NAAQS	South African National Ambient Air Quality Standards
NDCR	National Dust Control Regulations
NEMA	National Environmental Management Act
NEM: AQA	National Environmental Management Air Quality Act
NEM: BA	National Environmental Management Biodiversity Act
NEM: WA	National Environmental Management Waste Act
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act
PES	Present Ecological Status
PM10	Particulate matter less than 10 microns
PM2.5	Particulate matter less than 2.5 microns
ROM	Run of Mine
RWD	Return Water Dam
SACNASP	South African Council for Natural & Scientific Professionals
SAHRA	South African Heritage Resource Agency
SAMRAD	South African Mineral Resources Administration (System)
SDF	Spatial Development Framework
SLP	Social Labour Plan
TOPS	Threatened or Protected Species
WML	Waste Management Licence
WUL	Water Use Licence

EXECUTIVE SUMMARY

Project Background

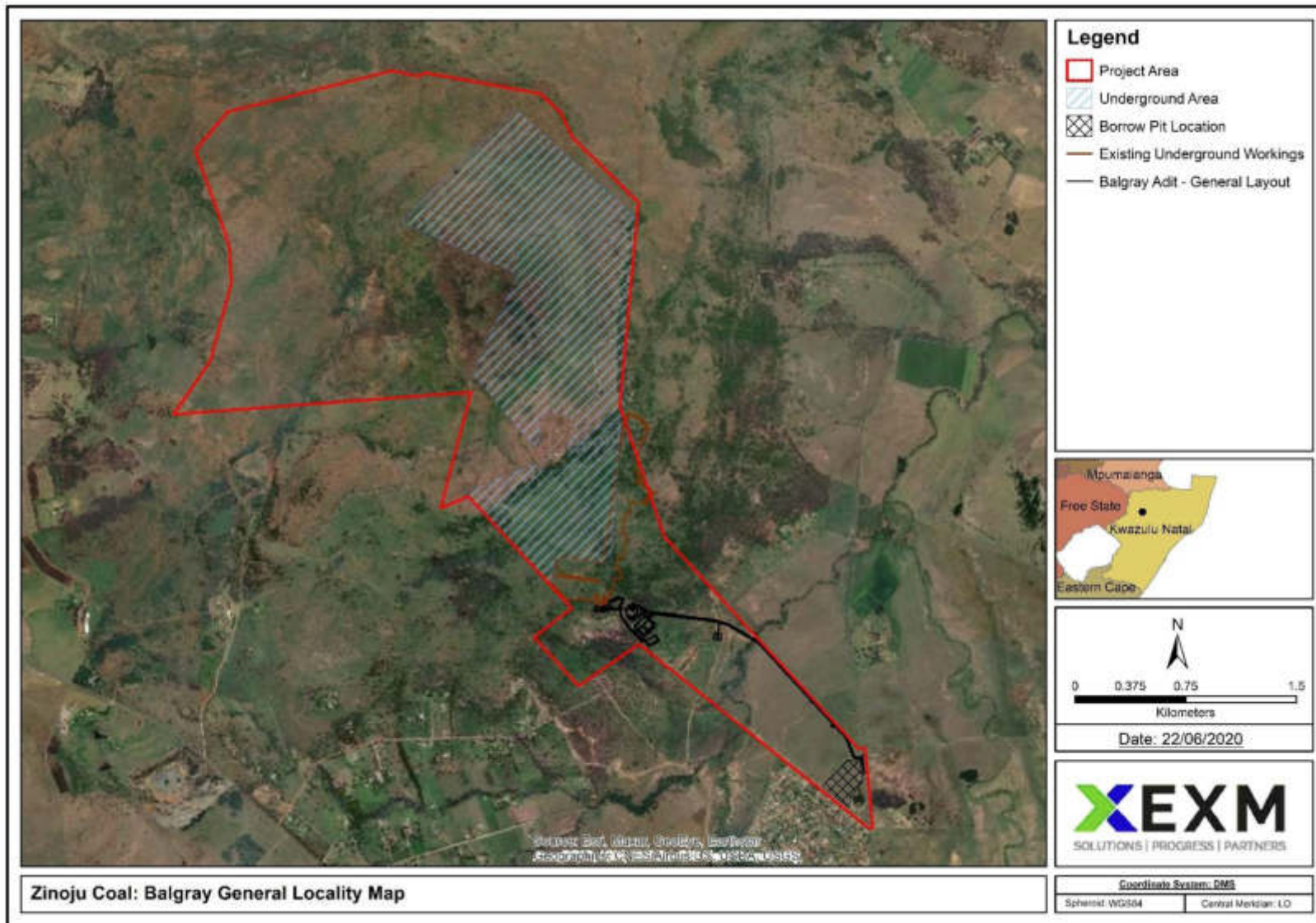
Zinoju Coal (Pty) Ltd proposes to refurbish the old Balgray Adit near Dundee in KwaZulu-Natal province in order to establish an underground coal mine that will target the Gus Coal Seam. The footprint area of the proposed surface infrastructure is approximately 10,2 hectares. The underground workings will however cover an area approximately 225 hectares. The Gus Coal Seam has an estimated anthracite coal reserve of 2.6 million tonnes and the mine will have a production rate of approximately 45 000 tonnes per month with Life-of-Mine (LoM) estimated at five (5) to six (6) years. The construction phase will be conducted over a period of approximately 11 months. It is estimated that 25 people will be employed during the construction phase and 225 people will be employed during the operational phase, excluding numerous contractual opportunities.

A conventional drill-and-blast mining method will be used for underground coal extraction. The extracted coal will be temporarily stored on site and transported to the existing Coalfields Coal Processing Plant east of Dundee and therefore no processing will be conducted on site.

Infrastructure associated with the proposed facility will include the following:

- A services platform - maintenance area, admin offices, staff rooms.
- Conveyor belt - convey coal to stockpile area.
- 3 Adits - portals to gain access to underground workings.
- Underground workings (225 ha)
- Run of Mine (RoM) stockpile area.
- Pollution Control Dam - containment of runoff from dirty areas.
- Access road - new access road and upgrade of existing road.
- Explosives magazine.
- Ventilation fans - ensure fresh air in underground workings.
- Sewerage management - conservancy tanks.
- Water supply - on-site borehole.
- A Borrow pit to extract building aggregate (only during construction phase of the project).

The purpose of this report is to present the results of the Environmental Impact Assessment (EIA) undertaken for the Balgray Adit Refurbishment Project and Underground Mine.



GENERAL LAYOUT OF THE PROPOSED PROJECT

Existing Infrastructure On-Site

The Balgray adit was previously used by Anglo-American to gain access and mine the underground coal reserve. Discard that emanated from historical processing operations was disposed at a discard dump that is located down-gradient of the Balgray Adit as indicated in the figure above. The mining operations was decommissioned in the late 1960's and the discard dump was rehabilitated and a closure certificate was issued for the dump (Ref. 6/2/3/2/39). This discard dump is not related to any past activities undertaken by Zinoju Coal on site and will not be used or disturbed as part of the proposed activities. The discard dump and associated water management infrastructure including the existing dirty water trenches and Evaporation Dam are thus not included in this application.

Environmental Authorisations Required

Application is being sought for authorisation in terms of the following:

- Section 102 of the Minerals and Petroleum Resources Development Act, 2002 for the amendment of the existing Zinoju Coal (Pty) Ltd: Aviemore Mine Environmental Management Programme (EMPr) to include the activities relating to the recommissioning of the old Balgray Colliery;
- Application for environmental authorisation for Activities 14 – explosives magazine (storage of dangerous goods), 24 - construction of a road, 27 – clearance of vegetation > 1ha (10.2ha), and 34 – dust suppression and Pollution Control Dam triggered in terms of listing Notice 1 (GNR. 983 as amended in 2017) and Activities 4 – construction of road and 12 – clearance of vegetation > 300m² in a critical biodiversity area triggered in listing Notice 3 (GN R. 985 of 2014) which requires environmental authorisation in terms of National Environmental Management Act, 1998 (Act No 107 of 1998). The application must be supported by a Basic Impact Assessment process in terms of Regulation 19 of the Environmental Impact Assessment Regulations (GN R982 of 2014, as amended by GN R326 of 2017); and
- An application for an Integrated Water Use Licence in terms of section 40 of the National Water Act, 1998 (Act No. 36 of 1998)(NWA) for new water uses as defined in terms of Section 21 (a) abstraction of water from a water resource; (c) – impeding or diverting the flow of water in a watercourse; (g) – disposing of waste in a manner which may detrimentally impact on a water resource; (i) – altering the bed, banks or characteristics of a watercourse; and (j) – removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people. The application will be made in terms of the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GNR. 267).

Pertinent Issues Raised by I&APs

The following pertinent issues were raised during the initial public notification:

- Noise generation as a result of the proposed Balgray operations that has the potential to cause nuisance conditions for the surrounding landowners and affect their sense of place.
- The effect that visual intrusion of the project will have on the scenic value of the area and affect their sense of place of surrounding landowners.
- Potential impact of blasting and associated vibrations on houses in the area.
- Potential increase in crime due to the influx of people to the area.
- The potential of the project to negatively impact on property values as surrounding areas are characterised by small holdings.
- Potential impact on water resources (fountains and rivers).

Environmental Impact Assessment Findings

A comprehensive environmental impact assessment was conducted in terms of the EIA regulations (GNR 982 as amended in 2017) to identify and assess potential environmental impacts associated with the proposed project. Mitigation measures or actions were also developed to prevent or minimise the consequences of the identified impacts. All mitigation has been incorporated into an Environmental Management Programme (refer to Part B of this report) to provide the proponent a consolidated guideline to operate the site according to best practice and legal requirements.

This Basic Impact Assessment Report (BAR) has been developed to provide details regarding the EIA process and findings which was conducted in conjunction with various specialist studies. The Table below contains a summary of the pertinent impacts associated with the project as well as the prescribed mitigation measures.

TABLE: PERTINENT RISKS PERTAINING TO PROPOSED PROJECT

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
Construction activities (grading, bulldozing, drilling, vehicles travelling)	Construction	Noise Increase noise levels due to construction activities that may cause nuisance to surrounding receptors/residents (night time)	High	<ul style="list-style-type: none"> Conduct construction drilling activities during the daytime. Minimize night-time traffic and construction activities, as far as possible. Implement a strict speed limit on site. A six-monthly noise monitoring program should be developed and implemented to ensure that the noise levels at the closest NSD are below 45 dBA. Develop a complaints management procedure and register for the site. 	Low
Borrow pit (excavation and vehicles)	Construction	Air Quality Excavation activities and vehicle-entrained dust generated by vehicles driving on unpaved roads	High	<ul style="list-style-type: none"> Removal of vegetation must be avoided until such time as it is required, and exposed surfaces must be stabilised as soon as practically possible. Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants. Enforce strict speed limit, i.e. 30km/h. Conduct baseline Dust Fall Monitoring prior to construction. Conduct Dust Fall Monitoring in terms of the National Dust Control Regulations in relation to all activities, including borrow pit. Implement dust management measures stipulated in the National Dust Control Regulations. Establish 50m buffer zone from the borrow pit to the residential areas. 	Low
Construction activities Laydown areas.	Construction	Visual	Moderate	<ul style="list-style-type: none"> Minimum amount of existing vegetation and topsoil should be removed, and natural vegetation should be retained for rehabilitation purposes. The construction camp must be positioned in an area less visible from receptors. 	Moderate

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
<p>Movement of vehicles</p> <p>Lights.</p> <p>Borrow pit</p>		<p>Residents immediate west of the site. Alteration to the visual quality of aspects of the study area due the removal of vegetation, topsoil and earthworks to create the working platforms.</p> <p>Visual intrusion caused by borrow pit for Dundee resident south of the site.</p>		<ul style="list-style-type: none"> • The height and extent of the retaining wall(s) associated with the adit (portal area) must be minimised as it is the most visible from sensitive viewing areas west of the site. • The footprint of the earthworks must be minimised and only conducted in demarcated areas. • Cut and fill slopes should mimic the shapes and angles found in the adjacent area; • Establish a vegetated earth berm screen (approximately 3 m high) along the western terrace of the adit (portal) area to screen sensitive views from residences immediately west of the site. • Where new vegetation is proposed to be introduced to the site, an ecological approach to rehabilitation, as opposed to a horticultural approach should be adopted. For example, communities of indigenous plants enhance biodiversity, a desirable outcome for the area. This approach can significantly reduce long term costs as less maintenance would be required over conventional landscaping methods as well as the introduced landscape being more sustainable. • Paint all structures with colours that reflect and compliment the colours of the surrounding landscape. Avoid pure whites and blacks. • Implement dust management measures stipulated in the air quality section. • Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site i.e. lights are to be aimed away from residential areas (south and west of the site) towards the mountain. • Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on illegal entry to the site. 	

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
				<ul style="list-style-type: none"> Minimise the number of light fixtures to the bare minimum, including security lighting. Establish 50m buffer from the borrow pit to the residential area. 	
Operational activities (general mine activities, ventilation fan, vehicles and machinery)	Operational	<p>Noise</p> <p>Increase noise levels due to operational activities that may cause nuisance to surrounding receptors/residents (night time)</p>	High	<ul style="list-style-type: none"> Orientate the ventilation fan optimally, not pointing towards any sensitive receptors. If possible, create a berm or barrier between the ventilation shaft and sensitive receptors. The mine can design and implement attenuators within the ventilation fan system to reduce the sound power emission levels of the fan to ensure that noise levels at the closest NSD are less than 45 dBA at night. Minimize all night-time mining traffic as far as possible. Implement a strict speed limit on site. A six-monthly noise monitoring program should be developed and implemented to ensure that the noise levels at the closest NSD are below 45 dBA. Develop a complaints management procedure and register for the site. 	Low
Dust generation. Infrastructure. Lights Movement	Operational	<p>Visual</p> <p>Residents immediate west of the site. Alteration to the visual quality of aspects of the study area due the presence of structures and the movement and haulage of materials on and off the site.</p>	High	<ul style="list-style-type: none"> Implement dust management measures stipulated in the air quality section. Maintain complaints handling procedure. Immediate rehabilitation of disturbed areas after construction has been completed. No trees should be removed that will cause increase visual exposure of the infrastructure on site. Ensure that vegetation that was planted as a visual shield is maintained to ensure optimum growth. Ensure that all lights are directed downwards away from receptors. 	Moderate

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
<p>Loading material from the ROM stockpile onto the trucks using a Conveyor belt (transferring and throw over point)</p>	Operational	<p>Air quality</p> <p>Dust generation – air quality and nuisance conditions</p>	High	<ul style="list-style-type: none"> An irrigation system at the material loading areas can be installed to prevent dust liberation from the operations. Prevent spillage from the conveyor belt by regulating the amount of material and feeding the material to the centre of the belt. The belt should be covered by skirting to prevent wind entrained dust. Coal spillages must be cleaned appropriately. Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants Enforce strict speed limit, i.e. 30km/h. Trucks should be covered to avoid wind blowing the material away and spillage on the road surface. 	Low
Systematic removal of the seam reserve by underground mining methods	Operational	<p>Groundwater</p> <p>Groundwater ingress due to underground mining of coal</p>	Moderate	<ul style="list-style-type: none"> No mitigation Should impacts on boreholes and springs occur an alternative water supply should be provided to the farmers that rely on that water. Water levels of hydro census boreholes within the predicted zone of impact should be monitored frequently to assess effects of dewatering over time. 	Moderate
<p>Local procurement</p> <p>Local employment</p> <p>Skill development</p>	Construction and operational	<ul style="list-style-type: none"> Increase in production and GDP-R due to operation expenditure Employment creation. Skills development 	Moderate positive	<ul style="list-style-type: none"> Maximise benefit for local economy through local procurement Offer skills development programme to serve mining market in the region and create local employability Skills levels in municipality and for benefitting individuals will improve due to employment created. Employing locally will increase benefit to local households and inadvertently the local economy. 	Moderate positive
Vehicles travelling on unpaved roads	Closure	<p>Air quality</p> <p>Dust generation and nuisance conditions</p>	High	<ul style="list-style-type: none"> Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants Vehicles must not exceed 30 km/h Limit access to construction site to construction vehicles only 	Moderate

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
Oxidation of minerals	Closure	<p>Groundwater</p> <p>Groundwater contaminant plume generated by the underground workings</p>	High	<ul style="list-style-type: none"> The underground workings must be allowed to flood to prevent oxidation of minerals. Implement measures stipulated in the EMPr related to AMD. 	Moderate

Summary of Environmental Impacts

The following provides a summary of the environmental impacts associated with the Balgray Colliery Refurbishment Project.

Positive impacts

The Endumeni and Dannhauser area has a high unemployment rate. The proposed mining activity will create numerous positive socio-economic benefits including job creation and procurement of local goods and services and will stimulate the local economy. It is estimated that 25 people will be employed during the construction phase and 225 people will be employed during the operational phase, excluding numerous contractual opportunities, of which approximately 95% will be allocated to the local community.

The stimulation of the national economy will occur as a result of the investment into the mine and proceeding increase in production. The subsequent benefits are employment creation, a rise in consumption levels, new business sales, and a contribution to GDP. The implementation of an Alien and Invasive Plant Management Plan to on site and in the surrounding Critical Biodiversity Area during operations and post decommissioning can have a net positive impact on biodiversity resources.

Negative impacts

The most significant impacts associated with the project relate to noise generation and visual intrusion of the project which may result in nuisance for receptors in the surrounding area and affect the sense of place of the residents. Other less significant social impacts identified relates to an ingress of people into the area which may result in increased crime and social ills such as substance abuse. The project has the potential impact on property values. The implementation of adequate mitigation will minimise social impacts.

Other impacts relate to biodiversity (disturbance of habitat, spreading of alien invasive species, degradation of sensitive areas etc.), surface and groundwater (hydrocarbon leakages, dewatering, sedimentation), air quality impact (increase in fugitive dust emissions), heritage impacts (destruction of heritage resources), soil (erosion and compaction) as well as wetlands and streams (disturbance, contamination, sedimentation). The project will have a relatively small footprint and the implementation of the mitigation measures stipulated in the EMPr will enable Zinoju Coal to effectively manage the potential negative impacts.

The mine has the potential to result in cumulative impacts on the quality of surface water resources as the Sterkstroom River is already impacted by other upstream sources.

Rehabilitation of the site will have a positive impact in terms of visual appearance, biodiversity and land use.

Public Participation:

A comprehensive public participation process as described in Section 8 is conducted in terms of the EIA regulations and applicable guidelines to inform relevant Interested and/or Affected Parties of the BA process and allow them to raise concerns or comments regarding the proposed project. The BAR document and specialist studies are available for review to all I&APs for a period of 30 days. A public information meeting will be conducted in July 2020 to engage with various stakeholders.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. DETAILS AND EXPERTISE OF THE EAP

Name of The Practitioner: EXM Advisory Services (Pty) Ltd

Tel No.: 010 007 3617

Fax No.: 086 616 0443

e-mail address: trevor@exm.co.za

TABLE 1-1: EXPERTISE OF THE EAP.

EAP	Qualification	Years' experience
Mr Trevor Hallatt	BSc Geography and Zoology (NWU) BA (hons) Environmental Management (NWU) MA Environmental Management (NWU)	9 Years

CV's with experience is attached as Annexure A: CV's of the EAP Team.

2. LOCATION OF THE OVERALL ACTIVITY.

A description of the property on which the proposed project (surface infrastructure and underground mining) will be located is provided in Table 2-1 and shown in Figure 2-1 and 2-2.

TABLE 2-1: LOCALITY OF THE ACTIVITY

21 digit Surveyor General Code for each farm portion	<u>OLD BALGRAY COLLIERY ADIT REFURBISHMENT PROJECT (SURFACE INFRASTRUCTURE)</u> NOGT00000000227200116 NOGT00000000227200071
	<u>OLD BALGRAY COLLIERY ADIT REFURBISHMENT PROJECT (UNDERGROUND MINING)</u> NOGT00000000447500000 NOGT00000001026000000
Application area (Ha)	Mining right area MR 301 covers 3,114.2078 hectares Mining right area MR 10083 covers 1,728.0124 hectares Surface infrastructure: 10.2 hectares Underground mining: approximately 225 hectares
Magisterial district:	Endumeni Local Municipality, part of the Umzinyathi District Municipality in the north-western part of KwaZulu-Natal.

Distance and direction from nearest town	~1.6 km north of Dundee (direct) ~8 km north-east of Glencoe (direct) ~20 km south-east of Dannhauser (direct)
21 digit Surveyor General Code for each farm portion	<u>OLD BALGRAY COLLIERY ADIT REFURBISHMENT PROJECT (SURFACE INFRASTRUCTURE)</u> NOGT00000000227200116 NOGT00000000227200071 <u>OLD BALGRAY COLLIERY ADIT REFURBISHMENT PROJECT (UNDERGROUND MINING)</u> NOGT00000000447500000 NOGT00000001026000000

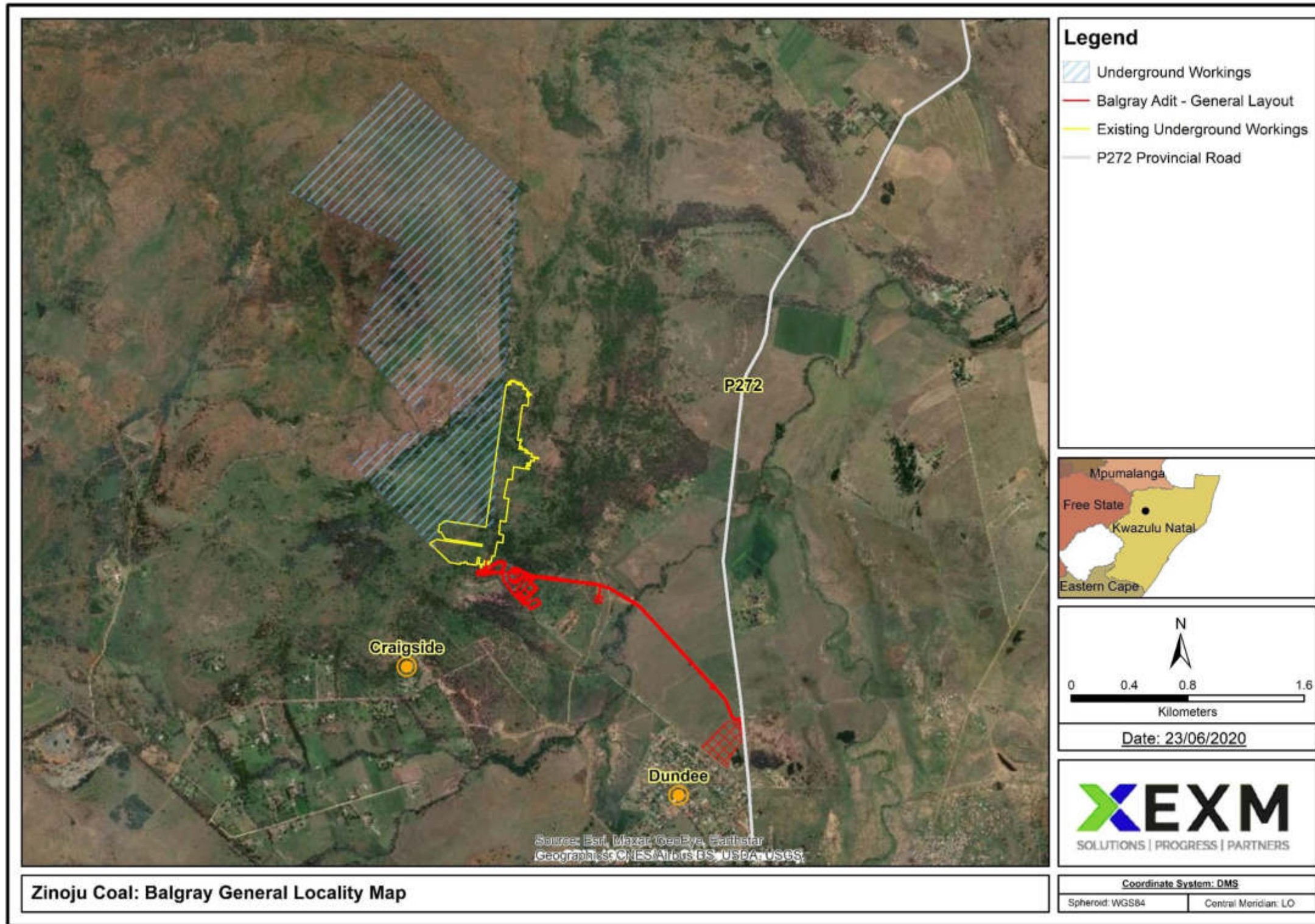


FIGURE 2-1: LOCALITY MAP OF THE PROPOSED BALGRAY ADIT REFURBISHMENT PROJECT

3. DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

3.1 Plan Showing Location of Listed Activities and Associated Infrastructure

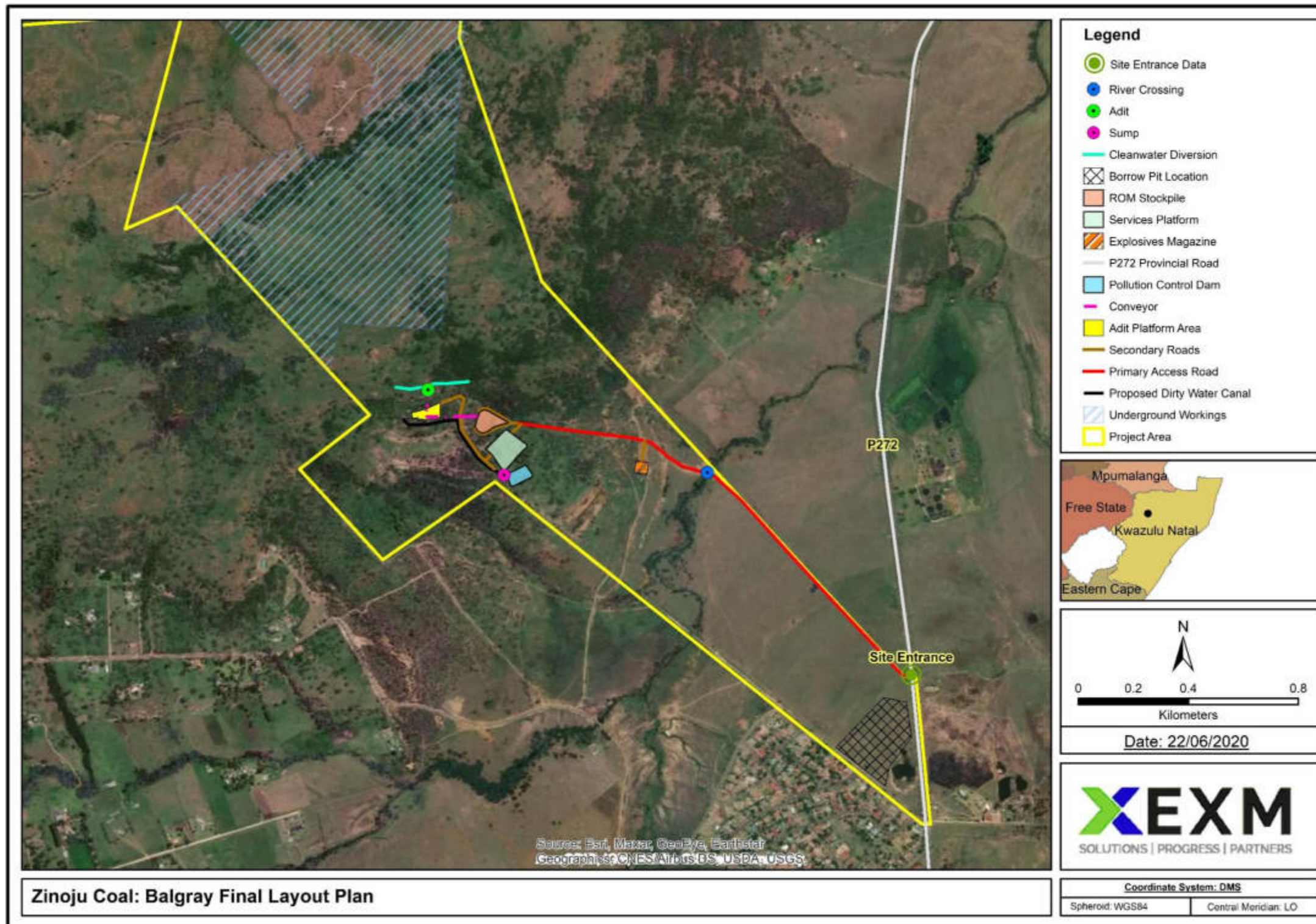


FIGURE 3-1: LISTED AND SPECIFIED ACTIVITIES

TABLE 3-1: LISTED AND SPECIFIED ACTIVITIES

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE
<p>Construction of an access road The construction of the access road between the adit area and the P727 provincial road. The road will be longer than 1 km and wider than 8 m.</p> <p><i>“The development of a road –</i> <i>i. “...”; or</i> <i>ii. with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 meters;</i> <i>but excluding a road –</i> <i>a) which is identified and included in activity 27 in Listing Notice 2 of 2014;</i> <i>b) where the entire road falls within an urban area; or</i> <i>c) which is 1 kilometre or shorter.”</i></p>	1.9 km	X	Activity 24 of GNR 983 Listing Notice 1
<p>Construction of an access road</p> <p><i>“The development of a road wider than 4 meters with a reserve less than 13.5 meters:</i> <i>d. KwaZulu-Natal</i> <i>(viii) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.”</i></p>	1.9 km	X	Activity 4 of GNR 985 Listing Notice 3
<p>Development of an explosives magazine to supply material for blasting.</p> <p><i>“The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.”</i></p>	0.2 ha	X	Activity 14 of GNR 983 Listing Notice 1
<p>Development of the river crossing</p> <p>The development of—</p>	400m ²	X	Activity 12 of GNR 983 Listing Notice 1

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE
i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or ii) infrastructure or structures with a physical footprint of 100 square metres or more; (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;			
Development of infrastructure, including services platform, PCD, Magazine, coal storage area, borrow pit etc. <i>"The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for –</i> <i>i. the undertaking of a linear activity;</i> <i>or</i> <i>ii. maintenance purposes undertaken in accordance with a maintenance management plan."</i>	10.2 ha	X	Activity 27 of GNR 983 Listing Notice 1
Development of infrastructure, including services platform, PCD, Magazine, coal storage area, borrow pit etc. <i>"The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan d. KwaZulu-Natal</i> <i>(viii) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans"</i>	10.2 ha	X	Activity 4 of GNR 985 Listing Notice 12
Dust Suppression and PCD	N/A	X	Activity 34 of GNR 984 Listing Notice 1

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE
<p>(Water Use Licence required)</p> <p><i>"The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution, excluding –</i></p> <p><i>i. where the facility, infrastructure, process or activity is 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 National Environmental Management: Waste Act, 2008 applies;</i></p> <p><i>ii. the expansion of existing facilities or infrastructure for the treatment of effluent, wastewater, polluted water or sewage where the capacity will be increased by less than 15 000 cubic metres per day; or</i></p> <p><i>iii. the expansion is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will be increased by 50 cubic meters or less per day."</i></p>			

3.2 Description of activities to be undertaken

3.2.1 Background

Zinoju Coal is a high quality thermal and metallurgical coal producer with operations in KwaZulu-Natal, South Africa. They currently have one operational mine namely the Aviemore Mine. Another mine (Magdalena) is currently under care and maintenance and will recommence operations in the near future. Zinoju Coal also owns the Balgray Colliery which is located within the approved Aviemore mining right (DMR Ref: KZN 30/5/1/2/2/301 MR).

Zinoju Coal proposes to refurbish the old Balgray Adit in order to gain access to the Gus Coal

Seam which has an estimated anthracite coal reserve of 2.6 million tonnes. Once refurbished, the mine will have a production rate of approximately 45 000 tonnes per month with life-of-mine (LoM) estimated at five (5) to six (6) years. A conventional drill-and-blast mining method will be used for underground coal extraction. The construction phase will be conducted over a period of approximately 11 months. It is estimated that 25 people will be employed during the construction phase and 225 people will be employed during the operational phase, excluding numerous contractual opportunities.

The old Balgray Adit, which is planned to be used for access to the underground workings, ventilation and coal extraction, is located on the steep southern slopes of the Impati Mountain. The adit has been sealed and the site is considered “partially” rehabilitated. Therefore, the adit and portals will be refurbished, and new surface infrastructure will be developed as part of the recommissioning of the mine.

An adit conveyor will be used to transfer mined coal to a run-or-mine (ROM) stockpile, from where it will be loaded onto road going haul trucks for distribution to the existing Coalfields Coal Processing Plant, located to the east of Dundee. No coal processing will take place on the site.

3.2.2 Existing Infrastructure On-Site

The Balgray adit was previously used by Anglo-American to gain access and mine the underground coal reserve. Discard that emanated from historical processing operations was disposed at a discard dump that is located down-gradient of the Balgray Adit as indicated in Figure 3-2. The mining operations was decommissioned in the late 1960's and the discard dump was rehabilitated and a closure certificate (DMR Reference: 6/2/3/239) was issued for the dump. This discard dump is not related to historic activities undertaken by Zinoju Coal on site and will not be used or disturbed as part of the proposed activities. The discard dump and associated water management infrastructure including the existing dirty water trenches and Evaporation Dam are thus not included in this application.

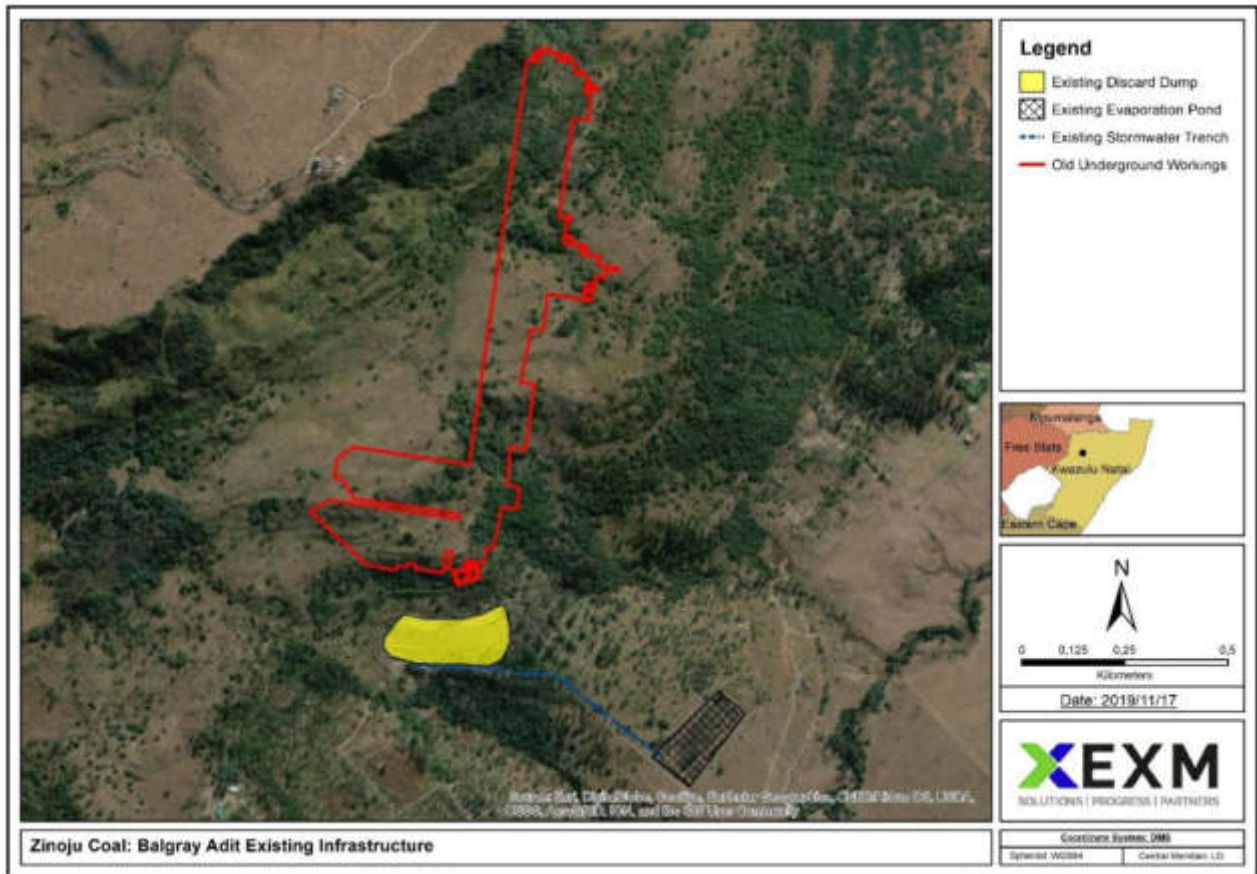


FIGURE 3-2: EXISITNG INFRASTRUCTURE ON SITE

3.2.3 Proposed Infrastructure

The following provides a description of the infrastructure associated with the proposed mining operations. The proposed infrastructure will cover an area of approximately 10.2 hectares. Refer to Figure 3-1 and Figure 3-3 for the conceptual infrastructure layout. Refer to Annexure 0 of Part C for the block plans which provide detailed layouts of the facility.

Services platform

A service platform will be established to support maintenance buildings and facilities such as workshops, fuel and lubricant storage, wash bay, salvage yard, lay-down areas, bulk service infrastructure, operations support buildings (administration and finance), parking and general logistics management areas. The services platform will cover approximately 1.1 hectares.

Adits

There are currently three adits or portals (Plate 3-1) at the site that will be refurbished in order to gain access to the underground coal reserve.



PLATE 3-1: EXISTING ADIT ON SITE

Run of Mine (RoM) stockpile area

The mined coal/ROM will be transferred approximately 200 meters via conveyor to a ROM stockpile from where it will be transported via trucks to an existing authorised Coal Processing Plant, located to the east of Dundee. The stockpile area will cover approximately 0.6 hectares.

Access road

An access and/or haul road will connect the mine with the P727 provincial road leading into the town of Dundee. A section of the road will be a new road and the remaining section will only require the upgrading of an existing dirt road. The total length of the road will be approximately 1.8 km. The road will cross the Sterkstroom River along its proposed route, requiring the construction of a river crossing structure. The bridge crossing has been included as part of the IWUL application.



PLATE 3-2: AREA AT STERKSTROOM RIVER FOR STREAM CROSSING

Explosives magazine

An explosives magazine will be established on the access road approximately 500m away from the operations. The explosives magazine will cover an area of 2000m².

Ventilation

Ventilation fans will be installed to ensure that fresh air is available for the underground activities. The fans will be orientated according to the recommendations of the noise impact assessment specialist study and the identified noise sensitive receptors.

Sewage management and water supply

A conservancy tank system will be installed for the handling of sewage emanating from the construction and operations. The tanks will be emptied by a contractor as required.

Potable water will be supplied by an on-site borehole. Groundwater abstraction from the borehole has been included in the Integrated Water Use Licence (IWUL) application. The Geohydrological assessment (CGS, September 2019, see Part C – Annexure 8) found that the borehole has a sustainable safe yield of approximately 492.96 m³ per month or 16,43 m³ per day which will be sufficient to supply the on-site water requirements. Water from the PCD (see Section 3.25) emanating from the dewatering activities and runoff from the operation will be used for dust suppression on the unpaved roads and exposed areas.

Borrow Pit

Zinoju Coal proposes to establish a borrow pit on site to extract aggregate material for the building of the project infrastructure. The borrow pit will have a short life span of approximately 11 months during the period in which construction of the Balgray infrastructure will be undertaken. The table below provides details of the proposed borrow pit. The total area will cover approximately 4.7 ha (Table 3-2). The method for the extraction of the material will entail excavation with front end loaders and back actors and hauling via trucks to the construction site. Material will only be extracted to a level that can be accessed by conventional mechanical digging and no blasting will be conducted.

TABLE 3-2: DETAILS OF BORROW PIT

Borrow Pit Description	Estimated Footprint (m²)	Estimated Selected Material Yield Volume (m³)
Borrow Pit "A"	47,000	40,000

3.2.4 Mining method

The mining operations will extract anthracite from the Lower Gus coal seam and the underground workings will cover approximately 225 hectares. The seam height varies between 1.5 m and 2.5 m with minimal mining dilution. Depth of cover increases from north to south with the majority of the current mine plan will be 200-250m below surface below surface. The Balgray mining operations will consist of two conventional drill and blast sections and some partial pillar extraction will also be done in the future. Refer to FIGURE 3-1 for the layout of the proposed underground works.

Mining will require dewatering to ensure that operations can continue without delay. Water pumped from the underground workings will be used for dust suppression during underground workings as well as surface dust suppression of the roads and materials handling areas. Excess underground water will be discharged to the PCD (if required). Dewatering will be conducted at a rate of approximately 57m³ per day.

3.2.5 Mineral waste

The abundance of mineral waste that is normally generated at an underground coal mine relates to the establishment of portals and tunnels to gain access to the coals seam. Moreover, mineral waste is also generated as a result of the ROM processing. As access to the coal seam has already been established and no ROM processing will be conducted at the facility, it is expected that minimal waste will emanate from the underground mining operations. Waste rock that will emanate from the underground workings will be placed in existing underground cavities of the previously mined out areas. No disposal facilities will therefore be required as part of the project and will significantly reduce the facility's footprint and prevent associated environmental impacts.

Processing of the ROM will be conducted at the offsite authorised Coalfields Processing Plant. Fine coal slurry will be disposed of in existing slurry paddock facilities at the Coalfields Processing Plant and then transported to Magdalena Mine Disposal Facility (Environmental Authorisation reference: DC25/0018/2012). Both the latter being offsite facilities and not part of the project.

3.2.6 Stormwater Management Infrastructure

Adit and Service Platform

The site will be designed according to the requirements of Government Notice (GN) 704, published in terms of the National Water Act (No 36 of 1998). Stormwater management measures will be established to separate clean and potentially contaminated water.

A stormwater Management Plan has been developed for the site (cPod Consulting 2019, see Part C – Annexure 11) that must be implemented to prevent contamination of surface water resources. Clean water channels will be placed upstream of all infrastructure areas to ensure the runoff collected is diverted to the downstream clean water environment or the nearest watercourse. Dirty water channels will be constructed downgradient of all dirty water areas such that all runoff is captured and conveyed to the downstream PCD. The dirty water areas include the adit platform area, overland conveyor area, ROM stockpile platform, and selected functional areas on the services platform.

As part of the refurbishing of the adit, a sump will be constructed downgradient of the adit, which will collect dirty storm water run-off from the adit and portals zone, as well as groundwater pumped from the underground workings. Water will be gravitated from the sump to a PCD which will be lined according to the specifications of the Hydrology Assessment (cPod Consulting 2019, see Part C – Annexure 11). The PCD will thus also manage dirty water from the services platform.

A cut off trench will be established to intercept clean water upgradient of the adit and associated infrastructure.

It is proposed that all clean water diversion structures be vegetated triangular berms with rip-rap cladding on the upstream berm slope, whilst all dirty water channels are constructed as concrete lined trapezoidal, triangular or V-drain channels.

Gravel Roads and Haul Roads

General stormwater management infrastructure, such as culverts, vee-drains and berms will be used along the proposed roads. Safety barriers and storm water berms will also be provided along selected areas of roads at the adit.

Borrow Pit

Current indications show that Zinoju Coal intends to use most of the material excavated at the borrow pit for construction purposes. A portion of the material removed at the borrow pit will be used to establish a berm upstream of the pit to divert runoff around the site for the control of erosion and siltation. The material will be used for sloping and the rehabilitation of the borrow pit once construction has been completed.

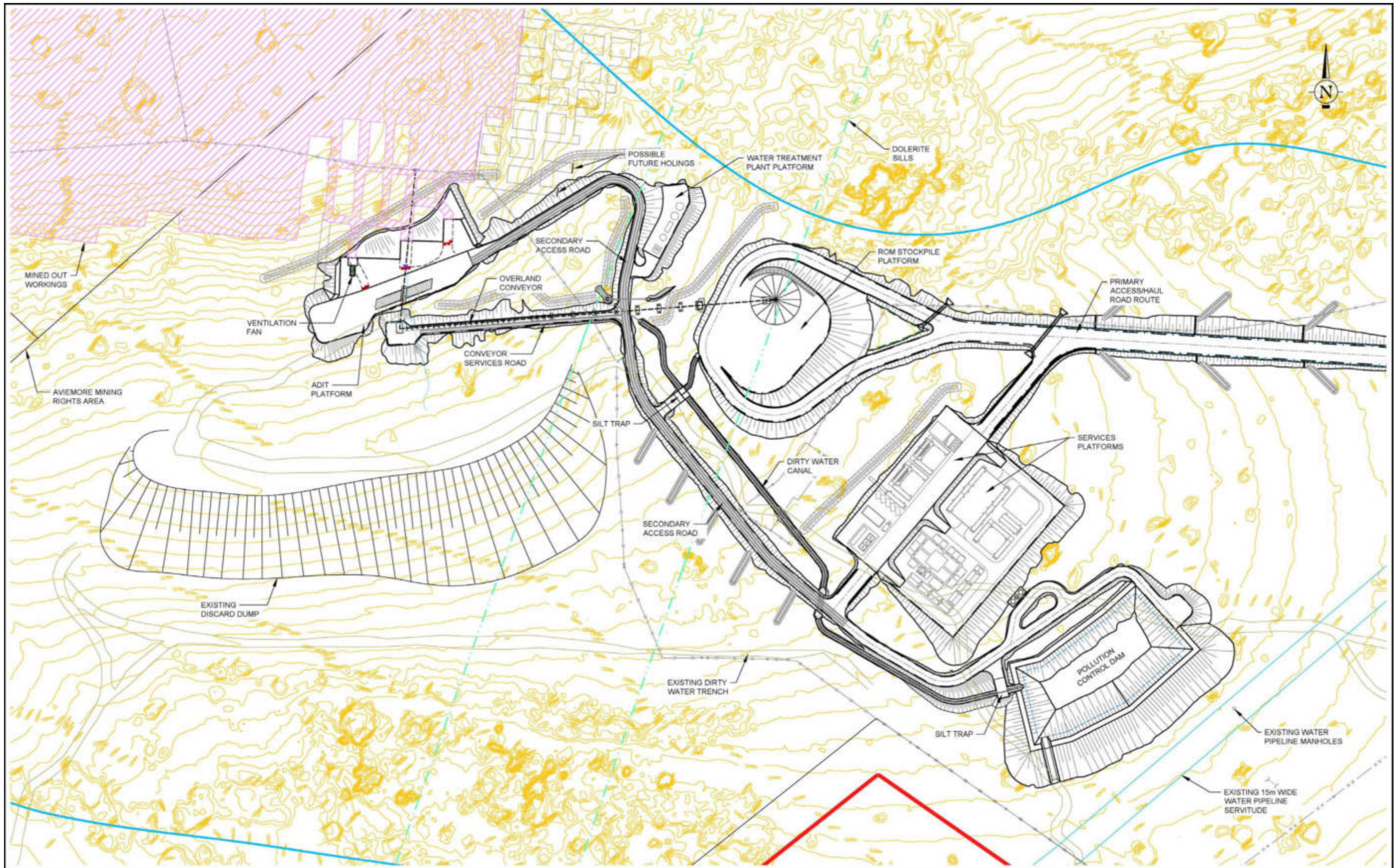


FIGURE 3-3: LAYOUT PLAN

4. POLICY AND LEGISLATIVE CONTEXT

This document has been prepared in accordance with the DMR Report template format and was informed by the guidelines posted on the official DMR website. This is in accordance with the requirements of the Minerals and Petroleum Resources Development Act (MPRDA, No. 28 of 2002). In addition, this report complies with the requirements of the National Environmental Management Act (NEMA) (Act 107 of 1998) and the EIA Regulations (2017). This section outlines the key legislative requirements applicable to the project.

4.1 Mineral and Petroleum Resources Development Act (No. 28 of 2002)

The MPRDA regulates the requirements for a mining right in order to mine a mineral and undertake associated activities. Mining can either include removal of an underground mineral or mineral occurring in a residue deposit or residue stockpile. The MPRDA requires the holder of a mining right not to cause any significant pollution or environmental degradation.

The Old Balgray Adit is located within the Aviemore Mining Right Area (DMR Ref: KZN 30/5/1/2/2/301 MR). The proposed surface infrastructure will also be located within the mining right area. However, some of the Balgray coal reserves fall outside the Aviemore mining right area (301 MR) under a separate prospecting right area (PR258) which is currently undergoing final adjudication to be granted a mining right (MR10083) – i.e. Aviemore North.

The Aviemore Colliery (Phase 1) Environmental Impact Assessment (EIA); including the Environmental Management Programme (EMPr) was approved under Section 39 of the MPRDA on 20th June 2013 (DMR Ref: KZN30/5/1/2/3/2/1/301EM)). Despite the Section in the MPRDA being repealed; all future environmental authorisations are regulated under National Environmental Management Act, 1998 (Act No. 108 of 1998) (NEMA); existing authorisations in terms of the MPRDA remain valid. However, the planned activities for the Balgray Adit Refurbishment Project are not currently approved in the Aviemore EIA/EMPr and will, therefore, require amendment in terms of Section 102 of the MPRDA to include management of proposed activities at the recommissioned Balgray Adit and proposed surface infrastructure.

Sections 53 and 54 of the Regulations require the holder of a mining right to make financial provision for rehabilitation and to action closure objectives of the Mine. These sections are however a consequence of Section 41 of the MPRDA (also now repealed) that requires the holder to make financial provision for closure and rehabilitation of the Mine. Financial provision for mine rehabilitation and closure is now regulated under NEMA and subsequent regulations. However, since the MPRDA Regulations are not repealed, Section 53 and 54 can still be

considered to applicable.

Section 106. (1) The Minister may by notice in the Gazette, exempt any organ of state from the provisions of sections 16, 20, 22 and 27 in respect of any activity to remove any mineral for road construction, building of dams or other purpose which may be identified in such notice.

(2) Despite subsection (1), the organ of state so exempted must submit an environmental management programme for approval in terms of section 39(4).

(3) any landowner or lawful occupier of land who lawfully, takes sand, stone, rock, [grave] gravel or clay for farming or for effecting improvements in connection with such land or community development purposes, is exempted from the provisions of [in] subsection (1) as long as the sand, stone, rock, gravel or clay is not sold or disposed of.

The borrow pit will be used to extract building material to effect improvement to the property and will therefore be done in terms of Section 106 of the MPRDA.

4.2 National Environmental Management Act (No. 107 of 1998)

Section 24 of NEMA provides for the Minister of Environmental Affairs to include activities in a list that require environmental authorisation before commencement. This has resulted in the promulgation of Listing Notices 1 (GN. 983), 2 (GN. 984) and 3 (GN. 985) (as amended in 2017) with the Environmental Impact Assessment (EIA) Regulations (GN. 982) of December of 2014 as amended by GN. 324-327 of 7 April 2017, guiding the requirements to undertake an EIA and apply for an environmental authorisation should a listed activity be triggered. As of 4 December 2014, activities at mining operations are also to be authorised under NEMA, with the DMR acting as the Competent Authority.

Activities under Listing Notice 1 (GN. 983) and Listing Notice 3 (GN. 985) are triggered and therefore the application for environmental authorisation requires completion of a basic impact assessment (BA) process in support of environmental authorisation of listed activities (Table 4-1).

TABLE 4-1: NEMA ACTIVITIES TRIGGERED BY THE PROJECT

Applicable Regulation		Project Infrastructure triggering the Listed Activity
<u>Listing Notice 1 (GN R. 327 of 2017)</u>		
Activity 12	The development of— i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or ii) infrastructure or structures with a physical footprint of 100 square metres or more;	Bridge crossing

Applicable Regulation		Project Infrastructure triggering the Listed Activity
	(a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;	
Activity 14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	Development of an explosives magazine to supply material for blasting.
Activity 24	The development of a road – i. "..."; or ii. with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 meters; but excluding a road – a) which is identified and included in activity 27 in Listing Notice 2 of 2014; b) where the entire road falls within an urban area; or c) which is 1 kilometre or shorter.	The construction of the access road between the adit area and the P727 provincial road. The road will be longer than 1 km and wider than 8 m.
Activity 27	The clearance of an area of 1 hectare or more , but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for – i. the undertaking of a linear activity; or ii. maintenance purposes undertaken in accordance with a maintenance management plan.	The proposed activities associated with the project will result in the clearance of more than one (1) hectare indigenous vegetation for construction of required infrastructure.
Activity 34	The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution, excluding – i. where the facility, infrastructure, process or activity is 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 National Environmental Management: Waste Act, 2008 applies; ii. the expansion of existing facilities or infrastructure for the treatment of effluent, wastewater, polluted water or sewage where the capacity will be increased by less than 15 000 cubic metres per day; or	The proposed project requires authorisation in terms of Section 40 of the National Water Act for Section 21(g) water uses. A separate water use licence will, therefore, need to be applied for, thus triggering the listed activity.

Applicable Regulation		Project Infrastructure triggering the Listed Activity
	iii. the expansion is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will be increased by 50 cubic meters or less per day.	
<u>Listing Notice 3 (GN R. 985 of 2014)</u>		
Activity 4	The development of a road wider than 4 meters with a reserve less than 13.5 meters: d. KwaZulu-Natal (viii) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.	According to the 2014 KZN Biodiversity Sector Plan of SANBI a section of the project falls within a Critical Biodiversity Area (CBA), defined as irreplaceable. The secondary access roads will be developed within the CBA.
Activity 12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan d. KwaZulu-Natal (viii) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans	According to the 2014 KZN Biodiversity Sector Plan of SANBI a section of the project falls within a Critical Biodiversity Area (CBA), defined as irreplaceable. Development of infrastructure will require clearance of vegetation within the reaches of the CBA.

Authorisation is being sought for activities applicable to the Balgray Refurbishment Project in terms of the EIA Listing Notices 1 & 3 of GNR. 983 and 985, as amended.

4.3 National Environmental Management: Waste Act (No. 59 of 2008)

All processing will take place off-site at the Coalfields Processing Plant and fine coal slurry will be disposed of in existing slurry paddock facilities at the Coalfields Processing Plant and then transported to Magdalena Mine Discard Dump (EA reference: DC25/0018/2012). Both the latter being offsite facilities are authorised and does not part of the project.

In terms of the National Environmental Management: Waste Act (No. 59 of 2008) (NEM: WA), waste management activities that are listed in regulations published under NEM:WA may not be undertaken without a Waste Management License (WML). The listed activities for which a WML is required are contained in Government Notice (GN 921). Category A activities require a WML and a Basic Impact Assessment (BA) process must be conducted, and Category B activities require a WML and a full Scoping and EIA process must be conducted. In terms of Schedule 3 of NEM: WA, mining waste (residue stockpiles and deposits) are defined wastes falling under Category A – Hazardous Wastes of NEM: WA which includes waste rock.

The project will not require a Waste Management Licence in term of NEMWA as per scope of work provided.

4.4 National Environmental Management Act: Air quality Act (No. 39 of 2004)

NEMA: AQA controls and regulates atmospheric emissions and provides for Listed Activities (GN. 893, November 2010) which have or may have a significant effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage. Any activity captured under this list require the person undertaking the activity to apply for an Atmospheric Emission Licence (AEL).

Zinoju Coal is required to comply with the National Dust Control Regulations (NDCR, GN. 827 of 1 November 2013) (as amended in 2019). Dust fall monitoring must be conducted in terms of the NDCR to assess the facility's contribution to dust fall. Additional measures must be implemented to control dust if the monitoring results show excessive dust generation.

Applicability: The project will not trigger any activities listed in the Regulation and there is therefore no need for an AEL.

4.5 National Environmental Management: Biodiversity Act (No. 10 of 2004)

Section 57 of NEM: BA restricts certain activities involving threatened and protected species (as listed in Regulation GN. 151 and 152, February 2007) without a permit. Restricted activities applicable to the project are limited to the potential removal of Threatened or Protected Species (TOPS) and plants during the clearance of vegetation.

4.6 National Water Act (No. 36 of 1998)

The purpose of this National Water Act (NWA) is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled. Section 21 of the NWA contains a list of activities that require a WUL prior to commencement. The proposed development will include water uses as defined in terms of Section 21 of the NWA and will include the following:

TABLE 4-2: SECTION 21 WATER USES TO BE INCLUDED IN THE IWULA

Water Use	Activity Description
Section 21 (a)	Abstraction of groundwater from an on-site borehole.
Section 21 (c&i)	New water course crossing over the Sterkstroom River
	New infrastructure within 500 m regulated zone of a wetland/watercourse
Section 21 (g)	Construction of a new Pollution Control Dam (PCD)

	Temporary Product Stockpiles
	Underground dust suppression (associated with the Section 21(j) application)
	Surface dust suppression of roads (associated with the Section 21(j) application)
Section 21 (j)	Removal of water from underground for the safe continuation of mining

An IWUL application process is being undertaken in terms of the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GNR. 267 of 2017). The IWUL application will be supported by an Integrated Water and Waste Management Plan (IWWMP) compiled in accordance with the requirements of Annexure D of GNR. 267.

It should also be noted that an application will be made for exemption of activities regulated in terms of regulations 4 of the Regulations on Use of Water for Mining and Related Activities Aimed at the Protection of Water Resources (GNR. 704 of 1999) to existing and proposed infrastructure associated with the proposed project.

TABLE 4-3: GN 704 EXEMPTION ACTIVITIES

No	GN 704 regulations	Activity requiring exemption
Bridge crossing		
1	4. Restrictions on locality <i>No person in control of a Mine or activity may –</i>	The bridge crossing that will be constructed across the Sterkstroom river and a portion of the haul road will be situated within the 1:100-year flood-line as determined by the hydrology assessment for the site.
2	<i>Regulation 4(a): Locate any associated structure or any other facility within the 1:100-year flood-line or within a horizontal distance of 100 metres from water courses</i>	Infrastructure that will be developed within 100m of a water course will include the following: <ul style="list-style-type: none"> • Conveyor. • ROM stockpile area. • Services platform. • Access roads. • Clean water channels • Underground mining.

4.7 National Heritage Resources Act (No. 25 of 1999)

The National Heritage Resources Act (NHRA) controls and regulates the interaction with heritage, archaeological, and paleontological artefacts and structures. Sections 34, 35 and 36 require that no person may demolish or alter any structure which is older than 60 years without a permit issued by the relevant provincial heritage resources agency. The NHRA further requires any person that disturbs any archaeological site, paleontological site or grave

cannot do so without a permit.

A Heritage Impact Assessment (HIA) was undertaken in order to identify any heritage sites within the expanded footprint area. A permit will need to be obtained in terms of the NHRA as per the recommendations of the HIA for the identified heritage sites. The South African Heritage Resources Council (SAHRA) have been consulted in terms of Section 38 of the Act.

4.8 The Environment Conservation Act (Act 73 of 1989)

The Environment Conservation Act ("ECA") allows the Minister of Environmental Affairs and Tourism ("now the Ministry of Water and Environmental Affairs") to make regulations regarding noise, among other concerns.

4.8.1 National Noise Control Regulations (GN R154 of 1992)

In terms of section 25 of the ECA, the National Noise Control Regulations (GN R 154 of 1992) were promulgated. The NCRs were revised under Government Notice Number R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations.

Subsequently, in terms of Schedule 5 of the Constitution of South Africa of 1996 legislative responsibility for administering the noise control regulations was devolved to provincial and local authorities. Provincial noise control regulations exist in the Free State, Gauteng and Western Cape provinces.

Noise levels associated with the project must be mitigated in order to comply with the relevant legislation and not to cause nuisance conditions.

5. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

5.1 Importance of Balgray operations to Zinoju from a Strategic Perspective

The current Aviemore underground mine located eight kilometres from the town of Dundee has an estimated production capacity of 41,000 tonnes of anthracite per month and the LOM will end within a period of approximately 21 months including the pillar extraction operation. To compensate for the potential loss of revenue and jobs after the LOM has been reached, Zinoju Coal is in the process to obtain the relevant authorisations to enable them to access the Aviemore North Seam. The process to establish authorisation has been obtained and the site may only be operational after the LOM of the current Aviemore LOM has been reached. The establishment of the Balgray operations will provide an interim solution to prevent negative socio-economic impacts due the future closure of the current Aviemore mine.

5.2 Importance of Coal in South Africa

Coal provides around 30.1% of global primary energy needs, generates over 40% of the world's electricity and is used in the production of 70% of the world's steel (World Coal Association, 2013) (1). South Africa possesses Africa's only significant coal reserves; over 95% of Africa's coal reserves are found in South Africa (US Energy Information Administration, 2014) (2), with coal reserves of 30,2 billion short tonnes at the end of 2012, which represents 4% of the world's total coal production. South Africa is the world's seventh largest coal producer and produced 3.3% of the world's coal in 2013 (256 million tonnes) (World Coal Association, 2013).

In 2013, South Africa used coal for 93% of its electricity generation needs and was the second most dependent coal-to-electricity country in the world, after Mongolia (World Coal Association, 2013). Apart from its domestic needs, South Africa is currently the world's sixth largest coal exporting country, with exports in excess of 70 million tonnes in 2013 (World Coal Association, 2013).

Coal plays a crucial role in the South African energy-economy and is fuelling local industry (Eberhard, 2010). The consumption of coal in South African coal-fired power stations will continue in the near future (Eberhard, 2010)

Increased demand in Eastern countries (driven by rapid economic growth rates) will result in an increased demand for South African coal exports (Eberhard, 2010). Coal exports are expected to increase to 105 million tonnes per annum by the year 2020. This will increase the country's export earnings, which in turn will reduce the country's negative trade balance and current account deficit (Eberhard, 2010).

Both local and international markets are, at present, highly dependent on South Africa being a main provider of coal, now and in the future. The identification and exploitation of new coal reserves in South Africa is thus a prerequisite in meeting this demand.

5.3 Socio-economic contribution of the project

The project will contribute to economic development on a local and national scale. According to the Socio-Economic Impact Assessment (Urban-Econ, 2019) the project will entail the following socio-economic benefits:

- Approximately 40% of the Capital Expenditure (CAPEX) items for the construction phase will be procured from the town of Dundee, 35% from the rest of Endumeni and Dannhauser municipalities, while 20% will be sourced from the rest of KwaZulu-Natal Province, and the remaining 5% from the rest of South Africa. There are no CAPEX items envisaged to be procured outside of South Africa.
- The demand for hospitality services including accommodation and catering in the nearby town of Dundee is expected to increase and provide for much needed stimulus for the local economy. The purchasing of local goods such as diesel will also contribute to local economic development.
- Approximately 25 direct temporary jobs will be created during the construction phase of which 18 jobs will be envisaged to be filled by people from either the town of Dundee or by the rest of Endumeni and Dannhauser municipalities. Although temporary, the jobs that will be provided during construction will increase the standard of living for the workers and also allow them to increase their skills base.
- The mine's operational expenditure (OPEX) is estimated at around R11m per month. Half of the OPEX is planned to go towards salaries and wages, 45% will be used for consumables (i.e. repairs and maintenance; power, health safety and environment; vehicles; fuel and other), and the remaining 5% will be spent on contractors.
- The project developers anticipate that a large component of the OPEX will be spent in the local economy. An estimated 45% of the colliery's OPEX will be spent in Dundee, 35% in the other parts of Endumeni and Dannhauser municipalities, 15% in KwaZulu-Natal, and the remaining 5% will be spent in the rest of South Africa.
- The majority of jobs associated with the project will be created during the operations. The project developers estimate that around 219 direct jobs will be created during the operational phase.
- At this stage, the project developers envisage that around 95% of the 219 direct jobs

6. MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE.

The proposed mining operations will be located at the existing old Balgray Adit that will be refurbished to gain access to the underground coal reserve. The site has been chosen due to its proximity to the coal reserve and accessibility. The local geology (transgressive dolerites sill) restricts access to the coal reserve from the Aviemore (northern) side. The site will be located at the existing old Balgray Adit which will reduce disturbance caused by the opening of a new adit. An existing road will provide access to the site. The proposed access road will include one river crossing at a section of the river already disturbed.

The layout of the infrastructure has been configured according to the space available on site and will only cover approximately 10.2 hectares. An alternative was proposed to establish infrastructure such as a truck turning area on the old rehabilitated discard dump. However, it was decided to avoid any disturbance of the old dump which would have resulted in a larger footprint compared to the proposed footprint and was not considered a feasible alternative.

The conventional drill and blasting method is viewed as the best available technology to extract the coal underground. Cutting machines were considered but is not a feasible option due to excessive water usage and required a high usage of electricity.

No ROM processing will be conducted on site. Mine residue from the off-site processing facility will be disposed of at the existing Magdalena Mine Discard Dump and fine coal slurry will be disposed of in existing slurry paddock facilities at the Coalfields Processing Plant and transported to Magdalena Mine Discard Dump (EA reference: DC25/0018/2012). The alternative would be to establish a new discard dump at the Balgray Adit but would result in additional environmental impacts and is not seen as the preferred alternative.

7. DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES

7.1 Details of the development footprint alternatives considered.

7.1.1 The property on which or location where it is proposed to undertake the activity

No location alternative was proposed for the project. Existing adits are located at the site which will prevent the establishment of new portals to gain access to the underground coal supply. The location of the mining operations was selected due to the position of the coal reserve and the local geology. The coal reserve cannot be accessed from the Aviemore (northern) side of the Impati Mountains due to a transgressive dolerite sill with a down throw of 45-50m. The site will be located at the existing old Balgray colliery which has been disturbed by previous activities. Therefore, the proposed activities will result in reduced disturbance. The proposed project is optimally located in terms of the existing coal processing facility in Dundee.

7.1.2 The Type of activity to be undertaken

The activity pertains to an underground mining operation to access the Gus coal seam. The only alternative activity would pertain to opencast mining to access the coal reserve. Open cast mining is not a practical or feasible approach to access the coal reserve due to the local geology characteristics. Underground mining is much less intrusive and will result in less disturbance compared to an opencast operation.

No processing will be conducted at the site, but rather at the existing Coal Fields operations. The alternative would be to process the ROM on site which will require additional surface infrastructure and land conversion. Processing on-site is not the preferred alternative.

7.1.3 The design or layout of the activity

7.1.4 Alternative layout

An alternative was proposed to establish the ROM stockpile area on the footprint of the old rehabilitated discard dump. This layout would have also entailed the realignment of the secondary access road. The establishment of the ROM on the rehabilitated discard dump would require a shorter conveyor belt from the adit area. However, this layout would result in higher visual intrusion compared to the preferred layout alternative which is partly obscured by the topography and vegetation. Establishment of infrastructure on the dump could also result in stability issues. It was decided to avoid any disturbance of the old dump which would have resulted in a larger footprint compared to the proposed footprint and was not considered a feasible alternative.

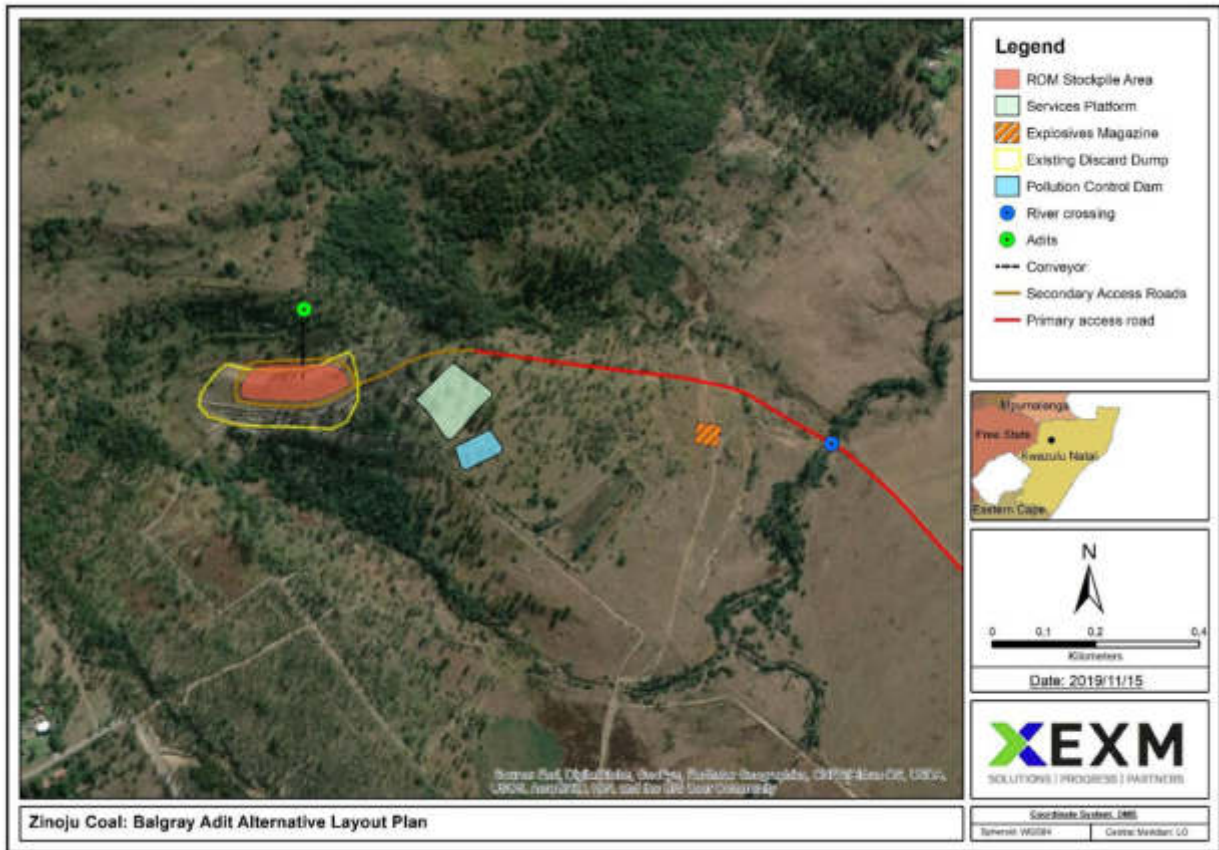


FIGURE 7-1: ALTERNATIVE LAYOUT

7.1.5 Alternative access road

Zinoju Coal proposes to upgrade the existing farm road to gain access to the mining operations. Only a small section will be a new road. One river crossing will be required for the preferred access road. The access road will link with the P272 provincial road on the eastern section of the lease area. An alternative access route has been identified as seen in Figure 7-1 below. The alternative access road will entail two river crossings and will enter a residential area. This will potential result in additional impacts on the surface water resources and cause traffic impacts.

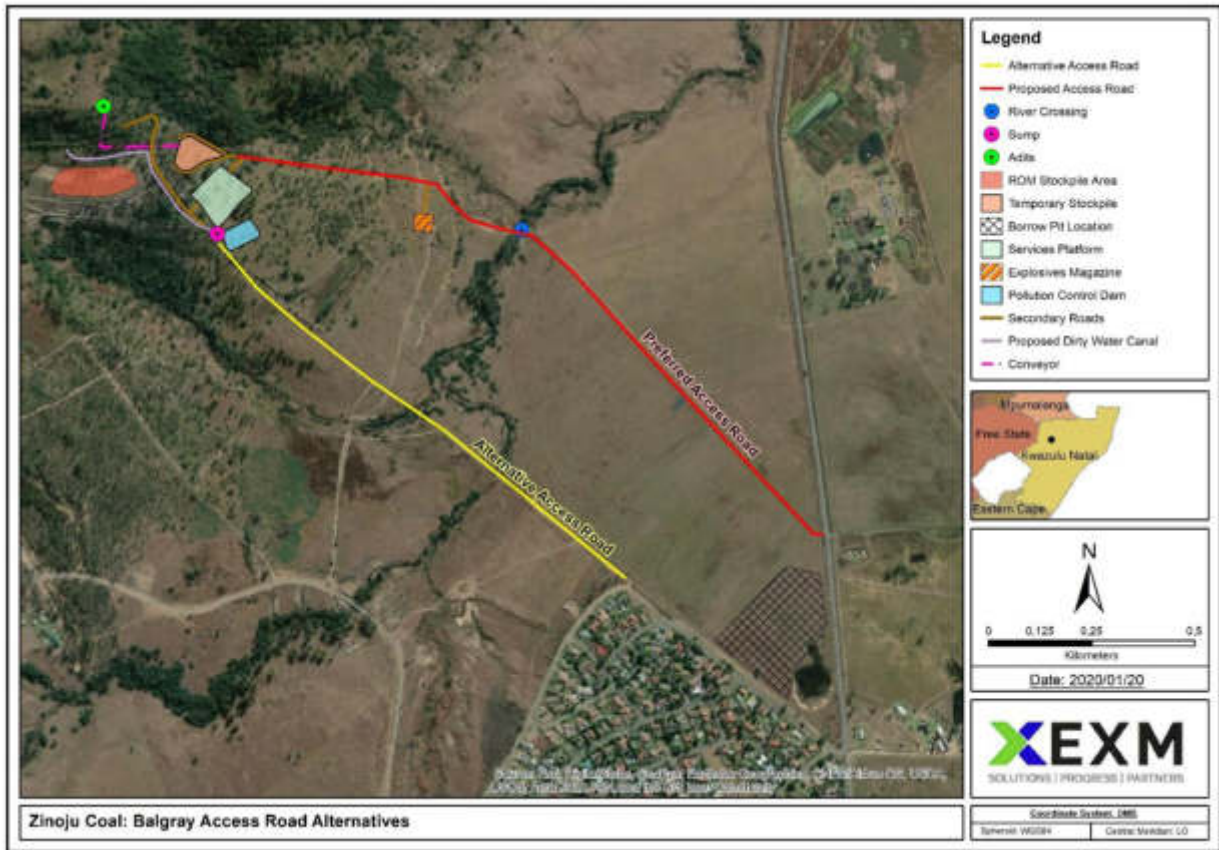


FIGURE 7-2: ACCESS ROAD ALTERNATIVES

7.1.6 The technology to be used in the activity

The conventional drill and blasting method is viewed as the best available technology to extract the coal underground. Cutting machines were considered but is not a feasible option due to excessive water usage and required a high usage of electricity.

7.1.7 Sourcing of building material

Zinoju Coal proposes to establish a borrow pit on site to extract aggregate material for the building of the project infrastructure. The borrow pit will have a short life span of approximately 11 months during the period in which construction of the Balgray infrastructure will be undertaken. The alternative would be to source the material from an alternative borrow pit at a considerable price and is not a feasible option. The borrow pit will only be operated during the construction phase.

7.1.8 The operational aspects of the activity

All processing of the ROM will take place at the existing Coalfields Processing Plant and fine coal slurry will be disposed of in existing slurry paddock facilities at the Coalfields Processing Plant and transported to Magdalena Mine Discard Dump for disposal (EA reference: DC25/0018/2012). Both the latter being offsite facilities and not part of the project.

The alternative would be to establish a processing plant on the site where the ROM will be processed and to establish a new discard dump at the Balgray Adit. This will result in additional land that must be converted which will cause potential biodiversity impacts. Other additional potential impacts may relate to surface and groundwater pollution, visual intrusion, dust generation.

7.1.9 The option of not implementing the activity

In accordance with the NEMA Regulations, the no-go alternative is required to be investigated and assessed. The no-go alternative will entail the non-continuation of the proposed refurbishment of the Balgray Adit and the status quo will remain. The socio-economic benefits associated with the project will be negated and local economic development pertaining to job creating and capital investment will not proceed.

The Balgray facility will be established to compensate for the potential loss of revenue and jobs after the LOM of the current Aviemore operations has been reached. The establishment of the Balgray operations will provide an interim solution to prevent negative socio-economic impacts due the future closure of the current Aviemore mine.

The status quo of the baseline environment will remain, and the insignificant negative impacts associated with the project will not be realised. The EIA found that the project will not result in significant adverse environmental consequences, especially taking into account the mitigation measures proposed. The no-go alternative is not a feasible alternative due to the socio-economic benefits that will be negated if the project does not proceed, compared to the insignificant potential environmental impacts.

8. DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

A public participation process is conducted in-line with the requirements of Chapter 6 of the NEMA Environmental Impact Assessment Regulations, Regulation 982 and Regulations regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GNR267). Refer to **Annexure B** of this report for the proof of public participation. The process entails the following:

- Identification of Interested and Affected Parties (IAPs);
- Notification of IAPs regarding the proposed project;
- Gathering comments, issues and concerns from IAPs;
- Responding to IAP comments, issues and concerns;
- Providing IAPs with the opportunity to review and comment on the BAR.

8.1 Identification of Interested and Affected Parties

Existing databases were updated for the purpose of this project. Potential Interested and Affected Parties (IAPs) were identified based on the definition of IAPs in the EIA regulations. This includes:

- Landowners or tenants adjacent to or within 100 m from the proposed study area. Neighbours and surrounding landowners, next to the mine was included.
- Representatives of the local municipality/ward councillor with jurisdiction in the area. This definition was expanded for the purposes of the assessment to include the mayor, councillors of the local council as well as members of the district municipality. This included representative of:
 - Endumeni Local Municipality (including councillors)
 - uMzinyathi District Municipality

Authority or organ of state having jurisdiction in respect of any aspect of the activity. The following organs of state have been notified:

- Department of Agriculture, Land Reform and Rural Development
- Department of Agriculture, Forestry and Fisheries (DAFF)
- SANRAL/NRA
- Department of Human Settlement
- Department of Transport

- South African Heritage Resources Agency
- AMAFA KZN Heritage Resources Agency
- Department of Agriculture and Rural Development
- Department of Economic development ,Tourism and Environmental Affairs
- Department of Health.
- Ezemvelo KZN Wildlife
- KZN Conservancies.
- Representatives of environmental regulatory authorities including:
 - Department of Water & Sanitation, KwaZulu-Natal
 - Department of Environment and Nature Conservation, KwaZulu-Natal
 - Department of Agriculture, Forestry and Fisheries, KwaZulu-Natal
 - Department of Mineral Resources, KwaZulu-Natal
- Persons who responded to the Background Information Document (BID), press advertisements and site posters

Refer to **Annexure B1** for the list of I&APs

8.2 Notification of Interested and Affected Parties

In accordance with the Section 41(2)(b) of Chapter 6 of the EIA Regulations (GN. 982 of 4 December 2014, as amended), written notifications (including BID document by email and SMS) has been given to:

- Surrounding landowners;
- Representatives of local government and the local municipalities;
- Ratepayer's association;
- Organs of state.

Written notifications (including BID document) was delivered by hand to the Endumeni Local Municipality. Refer to **Annexure B2** for a copy of the BID and **Annexure B3** for proof of distribution.

Other forms of notification included the placement of Site Notices (as per the Regulation required size) at various locations. Five site notices were placed at strategic public locations within Dundee at the following locations:

- Pick and Pay;
- Spar; and
- 3 Access Roads.

The site notices were available for a period of three (3) weeks whereby IAPs can register to be provided with more information on the project. Refer to **Annexure B4** for proof of site notice placement.

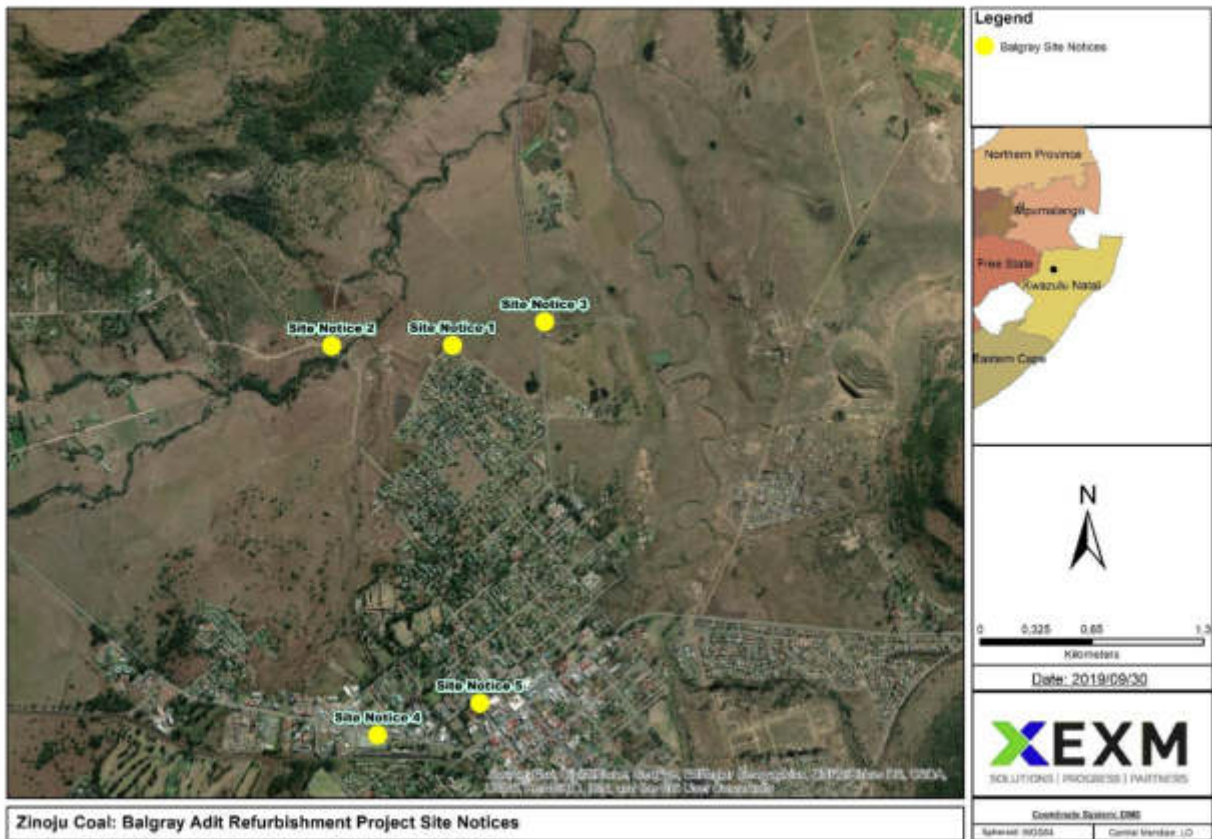


FIGURE 8-1: SITE NOTICE LOCATIONS

Press advertisements were placed in the following newspapers:

- The Newcastle Express on the 27th of August 2019 in English; and
- The Northern Natal Courier on the 28th August of 2019 in English.

Refer to **Annexure B5** for proof of advertisement placement.

8.3 Gathering Comments, Issues and Concerns from IAPs

IAPs were provided with the opportunity to register as IAPs and raise initial issues and concerns.

Refer to **Annexure B6** for the comments and response report.

8.4 Review and Commenting on the BAR and IWWMP

All I&APs is provided access to the draft BAR and IWWMP for review at the following locations:

- Electronically via email (trevor@exm.co.za)
- Electronic link:
- The documents listed above is available for review at the locations stipulated below:
- One drive electronic Link: https://exmadvisoryservices-my.sharepoint.com/:f/g/personal/trevor_exm_co_za/Er3kV8t3uV5MgXERoT7-EfEBA7nve2exzOs9rSeOIW9Jdw?e=5udj2c
- Dropbox electronic Link: https://exmadvisoryservices-my.sharepoint.com/:f/g/personal/trevor_exm_co_za/Er3kV8t3uV5MgXERoT7-EfEBA7nve2exzOs9rSeOIW9Jdw?e=5udj2c

8.5 Summary of issues raised by IAPs (refer to Annexure B6 for comments and response report with all communication)

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
AFFECTED PARTIES				
Landowners				
2019/09/23 (Email)	Toger Haupt	Good day Trevor As registered owners of Avoca farm –Property 28 – we hereby wish to be registered as an interested and affected party.	Mr. Haupt was added to the list of registered I&APs. All relevant documents will be circulated during the formal public participation process and review period.	In process
2019/09/06	Ndumiso Dlamini	Hi Trevor, I just received a message with regards to the abovementioned project. Could I kindly ask for the BID and any plans you may have of the area to be affected? We are based right by the Mpati Mountain, I believe will be the entry point. Thanks Regards,	Please find attached the BID for the project which contains the location as well as the conceptual layout plan. The entry point will be on the southern side of the mountain, north of Dundee. The BAR and specialist studies are being developed and the I&APs will be notified when it will be available for review.	In process
2019/08/30	Pam Mcfadden	Kindly register us as an interested party. Not sure if you are aware but Talana museum is the government accredited archive depot for all KZN coal mining material. Pam McFadden Curator Talana Museum, Battlefield and Heritage Park	Ms. Mcfadden was added to the list of registered I&APs. All relevant documents will be circulated during the formal public participation process and review period.	In process
2019/09/10	Stean Jacobs	Please could you include me as an interested and affected party regarding the Balgray Refurbishment Project. We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm. Furthermore, we are also concerned regarding the dust caused by trucks as the hauling road has already been scraped on the farms boundary and as such the dust will have a detrimental impact on the grazing capacity of the farm which in return will also affect the property's value.	Thank you for the correspondence regarding the proposed refurbishment of the Balgray Adit. Can you perhaps provide the name of the farm on which you are situated in order to gain context regarding your comments? I will add you to the list of interested and affected parties and inform you as the Basic Assessment and Water Use Licence continues. I will formally respond to your	In process

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
		<p>We are also concerned for safety as a mine attracts unwanted attention, how will this be mitigated?</p> <p>It is my understanding that the access route will be crossing a river which has previously been dammed up without our knowledge and was washed away with one of the storms. Will the river be dammed up again or how will our farm be affected?</p>	<p>concerns stipulated below in due course once all the reports have been developed and all information is available to provide an informed response. You will also be provided access to the documentation for comment once ready for review.</p>	
		<p>On a previous occasion a contractor also used the area as a borrow pit and excavated material on our property without any prior consent. We would like to ensure no such events occur in future and that our fence lines will remain intact and on their correct positions at all times.</p> <p>Kind Regards Stean Jacobs 074 8999 455 Avoca Farm</p>	<p>All the comments were addressed. Refer to Annexure B6 for the comments and response report.</p> <p>Ground water</p> <p>A model was created by the Geohydrological Specialist to determine the distance that pollution will travel in the underground water regime as a result of the Balgray project. From the model, the following is noted:</p> <ul style="list-style-type: none"> • The 250 mg/l and 500 mg/l SO4 contours remain in close proximity to the mining infrastructure; • The 250 mg/l and 500 mg/l SO4 contours do not intercept major rivers. The fountain in question falls outside the Zone of Influence with regards to the migration of pollution as a result of the mining operations and is unlikely to be affected. It should also be noted that springs in the area are situated approximately 60 to 100 m above the coal seam, and likely originate from the dolerite sill overlying the proposed Balgray section. In context this means that even if the spring falls within the ZOI, poor quality seepage at these springs is highly unlikely. 	

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
			<p>The predicted 2D aquifer drawdown zone at Life of Mine (LOM) for the Balgray project, is shown by Figure 2 provided. From the drawdown zone of influence generated, the following is noted:</p> <ul style="list-style-type: none"> • A maximum aquifer drawdown of 3 m, can be expected, with the lowest drawdown in the order of 0.1 m. It should be noted that the drawdown ZOI indicates drawdown in the aquifer layer directly above the underground workings. Hence, drawdown in regional water tables in the uppermost reaches of the mountain, is unlikely (due to mine depth). • No groundwater users (discovered during the survey) fall within the dewatering ZOI. • No perennial streams fall within the dewatering ZOI due to the dewatering depth underneath the mountain area (> 300 m). • The springs discovered in the area, namely spring F3 and spring F2, likely fall within the 0.3 m drawdown ZOI. Hence, the impact on the springs is likely to be low to insignificant. <p>Air Quality</p>	

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
			<p>An Air Quality Impact Assessment was conducted by Agreeco (2019) to determine the potential air quality related impacts associated with the proposed project. A model was created to determine the potential dust fall associated with the activities. It should be noted that the model shows the worst-case scenario without the application of mitigation measures. The National Dust Control Regulations (NDCR) standards for acceptable dust fallout rates are 600 mg/m²/day for residential areas and 1 200 mg/m²/day for non-residential areas. A figure was provided that shows the modelled dust fallout for the site on a daily average (24-hr). The results show no exceedances in residential and non-residential areas. The maximum dust fallout value to be reached according the air dispersion model is 488 mg/m²/day, which is well below the acceptable limits prescribed by the NDCR for residential areas.</p> <p>A figure was provided that shows the highest dust fallout for the site on a monthly average. According to the air dispersion model the maximum dust fallout value to be reached is 7 187 mg/m²/month. These values divided by 30 (or the amount of monitoring days in the month) is equal to 240 mg/m²/day, which is well below the acceptable limits prescribed by the NDCR for residential areas.</p>	

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
			<p>Safety</p> <p>The mitigation proposed in the Environmental Management Programme regarding impacts related to safety are as follows:</p> <ul style="list-style-type: none"> • Manage recruitment process to control expectations and unnecessary in-migration. • Implement controlled access to project site and monitor activity in immediate surrounding sites/area. • Set up local community safety forum. • Maintain contact with major community stakeholders. <p>River crossing</p> <p>A river crossing will be established across the Streskstream river on the access road according to engineering designs that will allow for the flow of water underneath. A Water Use Licence (WUL) application is conducted to establish the river crossing. The river will not be dammed up as part of the project.</p> <p>Borrow pit</p>	

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
			A borrow pit will be established on the site to source material for construction purposes and is included in the environmental authorisation process. The Basic Impact Assessment Report will contain the site layout which will show the location of all the infrastructure, including the borrow pit. The borrow pit will be located on the property on which the proposed infrastructure will be established according to the layout plans provided by the Applicant.	
2019/09/05	Marc Dreykon	<p>Afternoon Trevor</p> <p>I would like to register as an interested party regarding the refurbishment of the old Balgary adit and receive information as the application proceeds.</p> <p>Cell:079 847 7343 Physical address: 35 McPhail Drive Email: marcp@dreykon.co.za</p> <p>Regards Marc</p>	Please note that you have been added as an interested party for the proposed Refurbishment of the old Balgary adit. We will shortly commence with the formal public participation process and all documents will be made available for review. You will be notified as the process proceeds.	In process
2019/10/15	Nandi Zaloumis-Mitchell	We have not received any notification of a meeting as yet. Please advise when this will take place as I have numerous concerns.	Please note that you have been added as an interested party for the Basic Impact Assessment for proposed Refurbishment of the old Balgary adit. We will shortly commence with the formal public participation process and all documents will be made available for review. You will be notified as the process proceeds and when the public meeting will be.	In process
2019/11/18	Stean Jacobs	Good day Trevor.	Good day,	In process

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
		<p>I see that the construction of a dam has already commenced on the Balgray refurbishment project. I was under the impression that the Environmental authorizations were still being applied for?</p> <p>When can we expect to be informed regarding the progress of the project? or alternatively be warned.</p> <p>Here is an aerial photograph of the dam being constructed. There are already a number of excavators and construction equipment on site.</p>	<p>Please refer to the reply from the Applicant below regarding the activities currently undertaken on-site. Please feel free to contact me at any stage if you would like clarification.</p> <p>Kind regards Trevor</p>	
		<p>Good day Trevor</p> <p>Attached please see the activities already being conducted on the "Balgray Farm". Is this in order as we have not been informed of anything final arrangements? Please advise.</p> <p>Kind Regards</p>	<p>Zinoju Coal Has confirmed that the activities that were undertaken was the land owner and not Zinoju Coal. Refer to Annexure B6 (comments and response report) for the full response</p>	In process
2019/09/18	Nandi Zaloumis-Mitchell	<p>Hi Trevor</p> <p>Please advise what is happening. I see allot of activity in that area including the use of large amounts of lights.</p> <p>When will this meeting take place?</p> <p>Kind Regards</p>	<p>Good day,</p> <p>Please refer to the below response from the applicant regarding your comment. The date of the meeting will be communicated early January 2020.</p> <p>Kind regards Trevor</p> <p>Zinoju Coal Has confirmed that the activities that were undertaken was not related to Zinoju Coal. Refer to Annexure B6 (comments and response report) for the full response</p>	In process
Local Authorities No comments received yet.				
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA etc.) No comments received yet.				

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
2019/10/31	Bernadet Pawandiwa KwaZulu –Natal Amafa and Research Institute	Good day Please submit the application as per guidelines on the application form J-Developments on www.heritagekzn.co.za.	Good day, We will submit the required form as required. Kind regards	In process
2019/09/20	Sub Directorate: Forestry Regulations & Support Department of Agriculture, Forestry and Fisheries	The Department of Agriculture, Forestry and Fisheries appreciates the opportunity to register as an interested and affected party for the above-mentioned project. DAFF through the sub-directorate Forestry Regulations and Support is the authority mandated to implement the National Forests Act No. 84 of 1998 by regulating the use of natural forests and protected trees species in terms of the said Act. The department would like to register as interested and affected party for the proposed project. With regards to the Background Information Document received on 11/09/2019, the proposed project will trigger activity 12 and 27 (clearing of indigenous vegetation). Therefore, the department recommend that ecological specialist report be conducted and incorporated to the Environmental Impact Assessment Report inclusive of the EMPr. This letter does not exempt you from considering other environmental legislations. Should any further information be required, please do not hesitate to contact this office.	Your attached comments regarding the refurbishment of the Old Balgray Colliery holds reference. Please note that we are in the process to finalise the relevant documents (BAR, IWWMP and Specialist Studies) as part of the application process. Relevant specialist studies including fauna, flora and aquatic assessments have been undertaken. I have added you to the list of registered I&APs. All the documentation once finalised will be communicated to the I&Aps for comment. Please do not hesitate to contact me if you require additional information.	In process
Traditional Leaders No comments received yet.				
Competent Authorities affected No comments received yet.				
INTERESTED PARTIES No comments received yet				

8.6 Pertinent Issues Raised by I&APs

The following pertinent issues were raised verbally during the initial public notification:

- Noise generation as a result of the proposed Balgray operations that has the potential to cause nuisance conditions for the surrounding landowners and affect their sense of place.
- The effect that visual intrusion of the project will have on the scenic value of the area and affect their sense of place of surrounding landowners.
- Potential impact of blasting and associated vibrations on houses in the area.
- Potential increase in crime due to the influx of people to the area.
- The potential of the project to negatively impact on property values as surrounding areas are characterised by small holdings

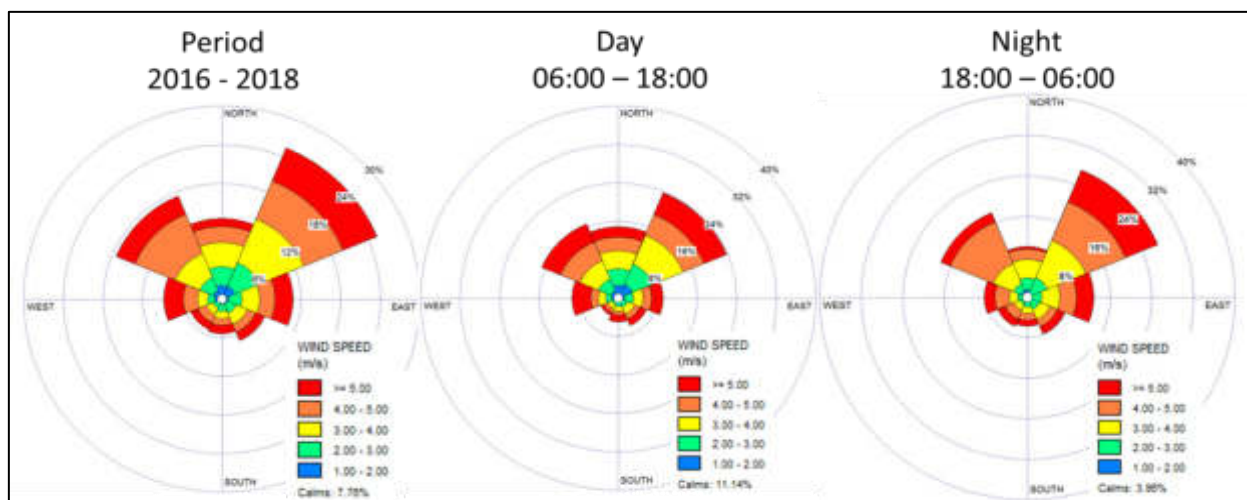
9. ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE STUDY AREA

This section provides a description of the baseline environmental features within the study area.

9.1 Climate

The description of the existing air quality environment has been sourced from work undertaken as part of the Air Quality Impact Assessment (Agreenco, 2019a), see Part C – Annexure 1.

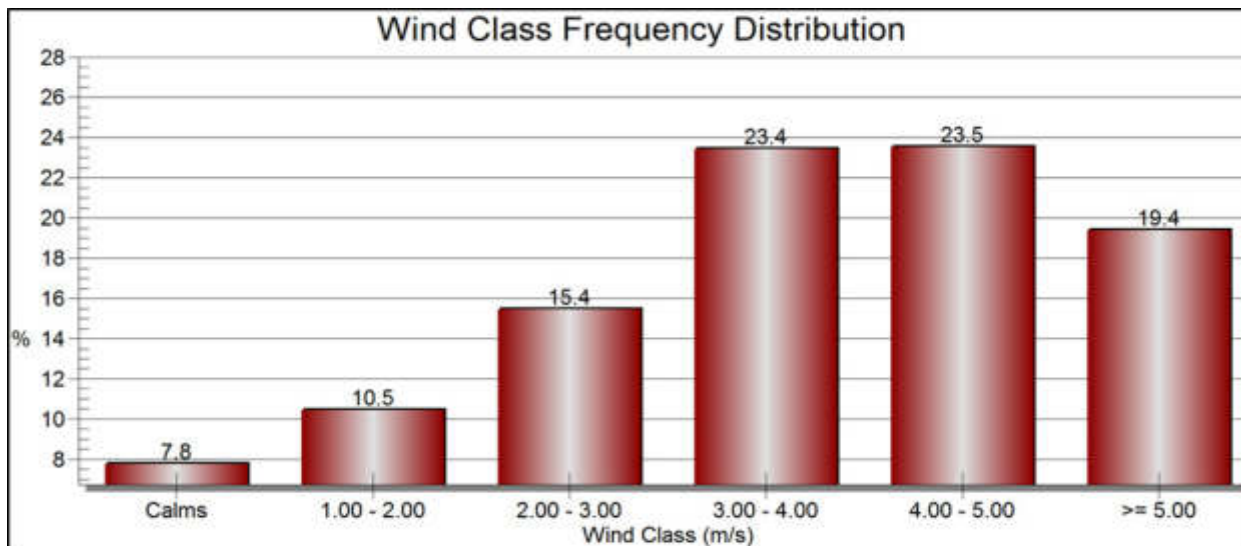
The regional wind direction and speeds are of importance as they provide an indication of the receptor that will experience the greatest impacts resulting from atmospheric emissions and dust. The wind rose at the Balgray Colliery for the period of January 2016 to December 2018 (as provided by Agreenco, 2019a) is provided in Figure 9-1 below. The dominant wind direction blows from a north easterly direction.



Source: Air Quality Impact Assessment (Agreenco, 2019)

FIGURE 9-1: PERIOD AVERAGE WIND ROSE FOR JANUARY 2016 TO DECEMBER 2018

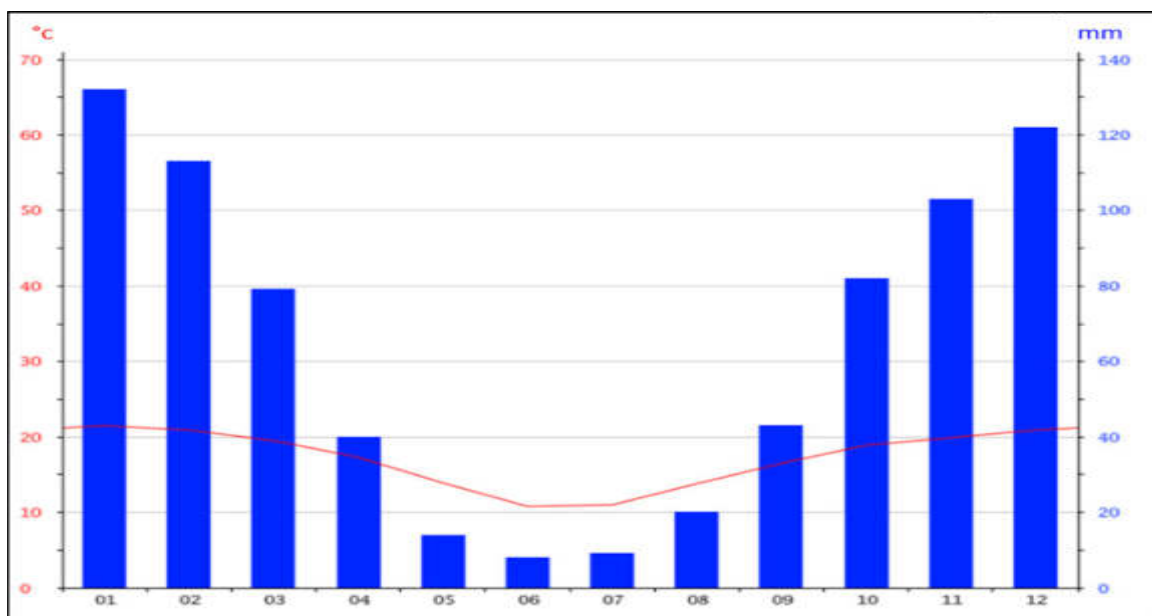
The highest percentage of wind speeds is between 3 m/s – 5 m/s as depicted in Figure 9.2. The highest wind speeds from the north easterly direction are experienced during summer and spring and north westerly during winter.



Source: Air Quality Impact Assessment (Agreenco, 2019a)

FIGURE 9-2: THE WIND CLASS FREQUENCY DISTRIBUTION FOR JAN 2016 – DEC 2018

Figure 9-3 illustrates the average temperature and rainfall for Dundee. Dundee is situated in a summer rainfall area with the highest rainfall occurring from October to March. The average rainfall for Dundee is 765 mm per year. The average temperature varies from 22°C in summer to 11°C in winter.



Source: Air Quality Impact Assessment (Agreenco, 2019)

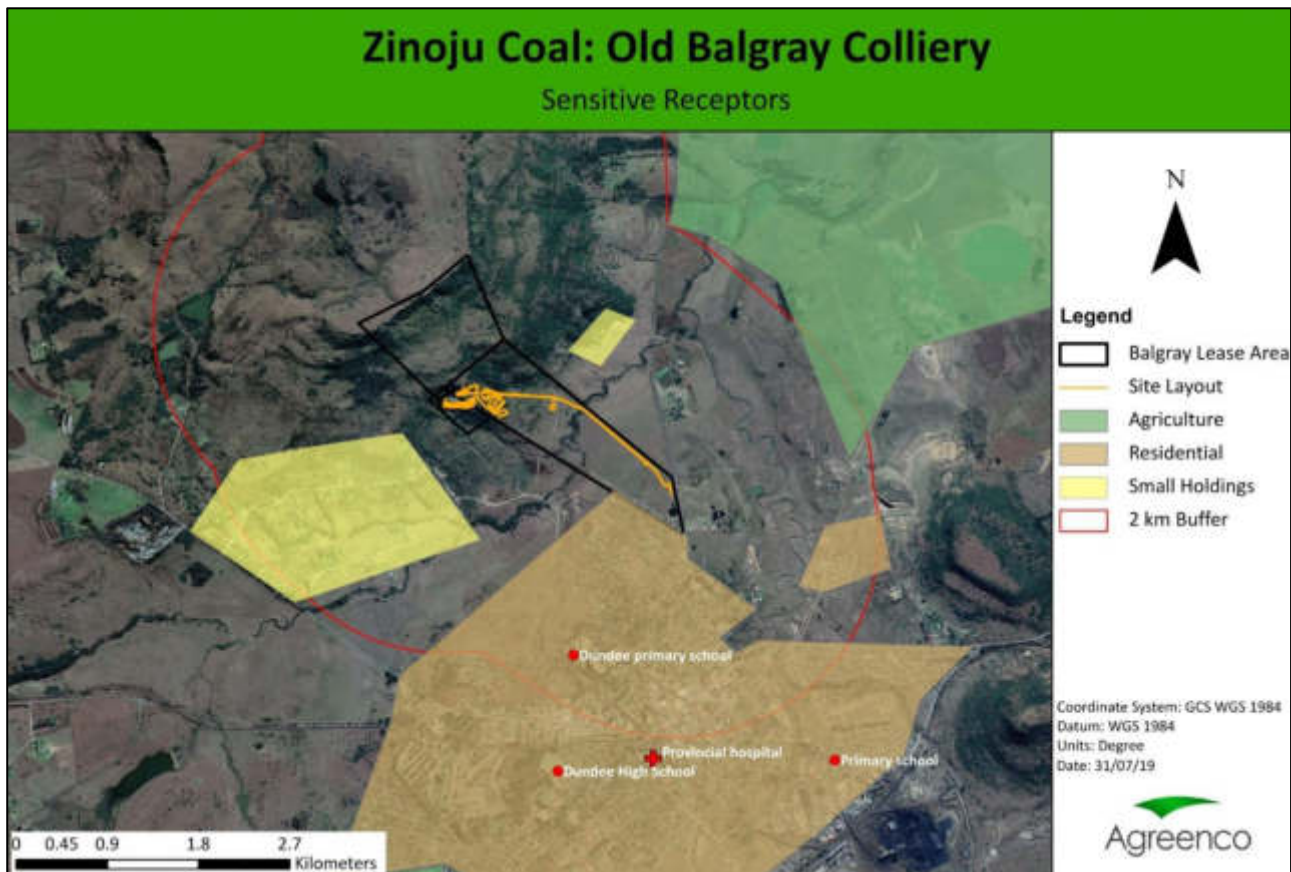
FIGURE 9-3: AVERAGE CLIMATE GRAPH FOR DUNDEE, KWAZULU-NATAL (CLIMATE-DATA.ORG)

9.2 Air Quality

Sensitive receptors

Sensitive receptors include areas where the occupants are susceptible to the effects of exposure to dust. These areas need extra care when dealing with pollutants in close proximity to areas recognised as sensitive receptors, which include but are not limited to hospitals, schools, elderly housing and day care facilities.

Figure 9-4 shows the sensitive receptors in close proximity to the proposed Balgray colliery. These receptors include Dundee agriculture areas and small holdings outside Dundee. The colliery is less than 2 km from Dundee, which could result in a risk to the residents in town and people living in the small holdings east and west from the colliery. The closest school to the colliery is Dundee primary school. A hospital is located approximately 3.8 km from the underground open area and 2.5 km from the entrance gate.



Source: Air Quality Impact Assessment (Agreenco, 2019)

FIGURE 9-4: IDENTIFIED SENSITIVE RECEPTORS IN CLOSE PROXIMITY TO THE BALGRAY COLLIERY

Baseline Ambient Air Quality

According to Agreenco (2019a), the exact baseline ambient air quality concentrations are unknown. The study area is not classified as a high priority according to the South African Air Quality Information System (SAAQIS). Currently, no monitoring data are available from which the baseline ambient air quality could be derived. There are other mines around Dundee, which may contribute to some levels of air pollution.

There are currently no significant dust sources at the site. The area does have access roads that are infrequently used by the landowner for farming activities. The legacy coal discard facility is vegetated. Areas with no vegetation cover due to erosion by water are compacted and are not a dust risk. If the vegetation is removed for any reason this may become a dust risk due to wind erosion.

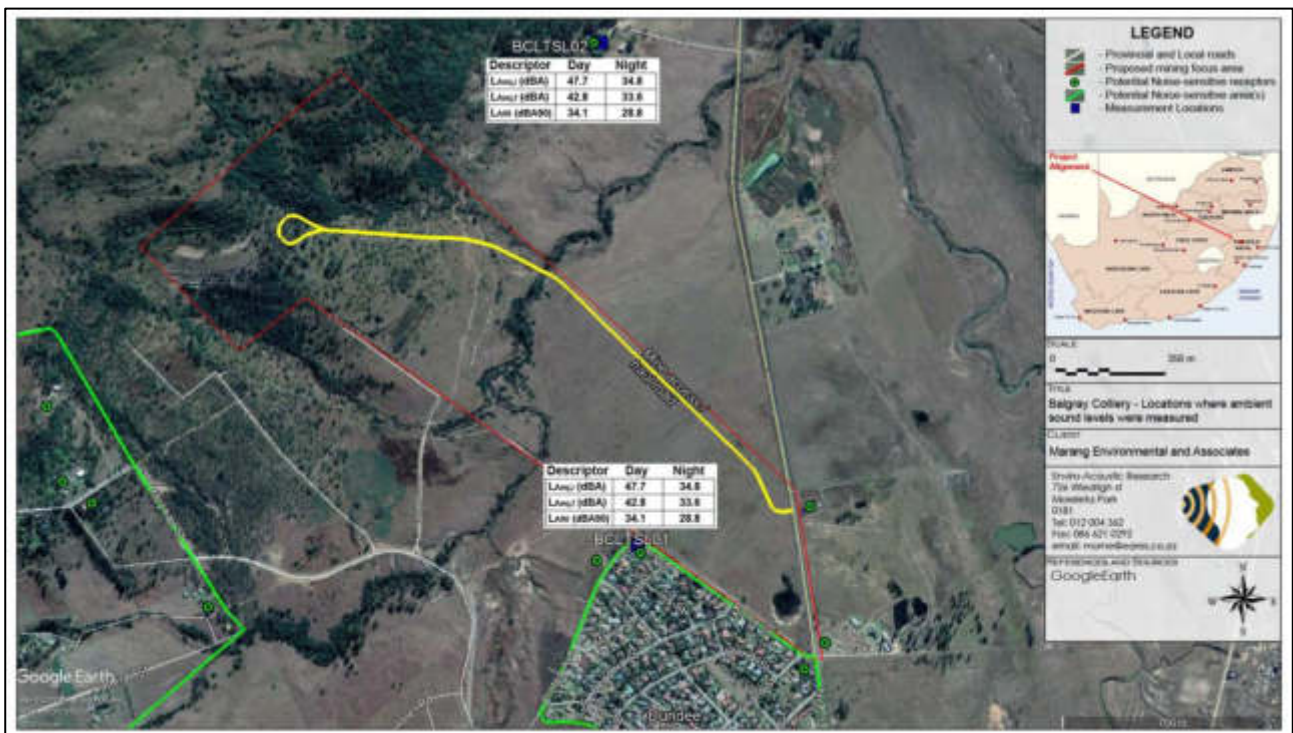
9.3 Noise

The description of the existing noise environment has been sourced from work undertaken as part of the Noise Impact Assessment (Enviro Acoustic Research, August 2019), see Part C – Annexure 2.

A noise impact assessment was undertaken by Enviro Acoustic Research (EAR) (2019) to identify the sensitive receptors in the area, determine the current noise levels and to assess the potential increase in noise levels due to the proposed mining development. Noise monitoring was conducted in two locations (see Figure 9-5 below) and the results revealed that the area is characterised by sound levels (day and night) typical of quiet residential areas in Dundee, typical of a rural noise district. There were no specific noises sources that were dominant.

The proposed mining activities should, ideally, not change the existing ambient sound levels with more than 7 dBA which is specified by the Noise Regulations. Accepting an average daytime ambient sound level of 45 dBA, this would set the acceptable rating level at less than 52 dBA for daytime noise levels. Accepting typical night-time ambient sound levels of 35 dBA, activities from the mine should not change the ambient sound levels with 7 dBA, or higher than 42 dBA.

Within the noise impact area, residential areas and potential noise-sensitive developments/receptors/communities (NSD) were identified during the Noise Impact Assessment based on specific buffer zones. Refer to Figure 9-5 for the location of the identified receptors.



Source: Noise Impact Assessment (EAR, 2019)

FIGURE 9-5: STUDY AREA AND POTENTIAL NOISE-SENSITIVE RECEPTORS AND MONITORING LOCATIONS

9.4 Visual Environment

The description of the existing visual environment has been sourced from work undertaken as part of the Visual Impact Assessment (Newtown Landscape Architects, August 2019), see Part C – Annexure 3.

The study area, a 5,0 km radius about the project site, comprises the Balgray Colliery, open land, residential areas (to the south and south east of the site) and peri-urban residential areas west of the site, and industrial areas to the south of the site. The visual character of the study area is a balanced mixture of these various land uses with no one activity dominating. A visual divide is created by Impati Mountain that extends south-west to north-east across the study area. All areas north of the will not be able to see the project site. Figure 9-6 indicates the location of the viewpoints.

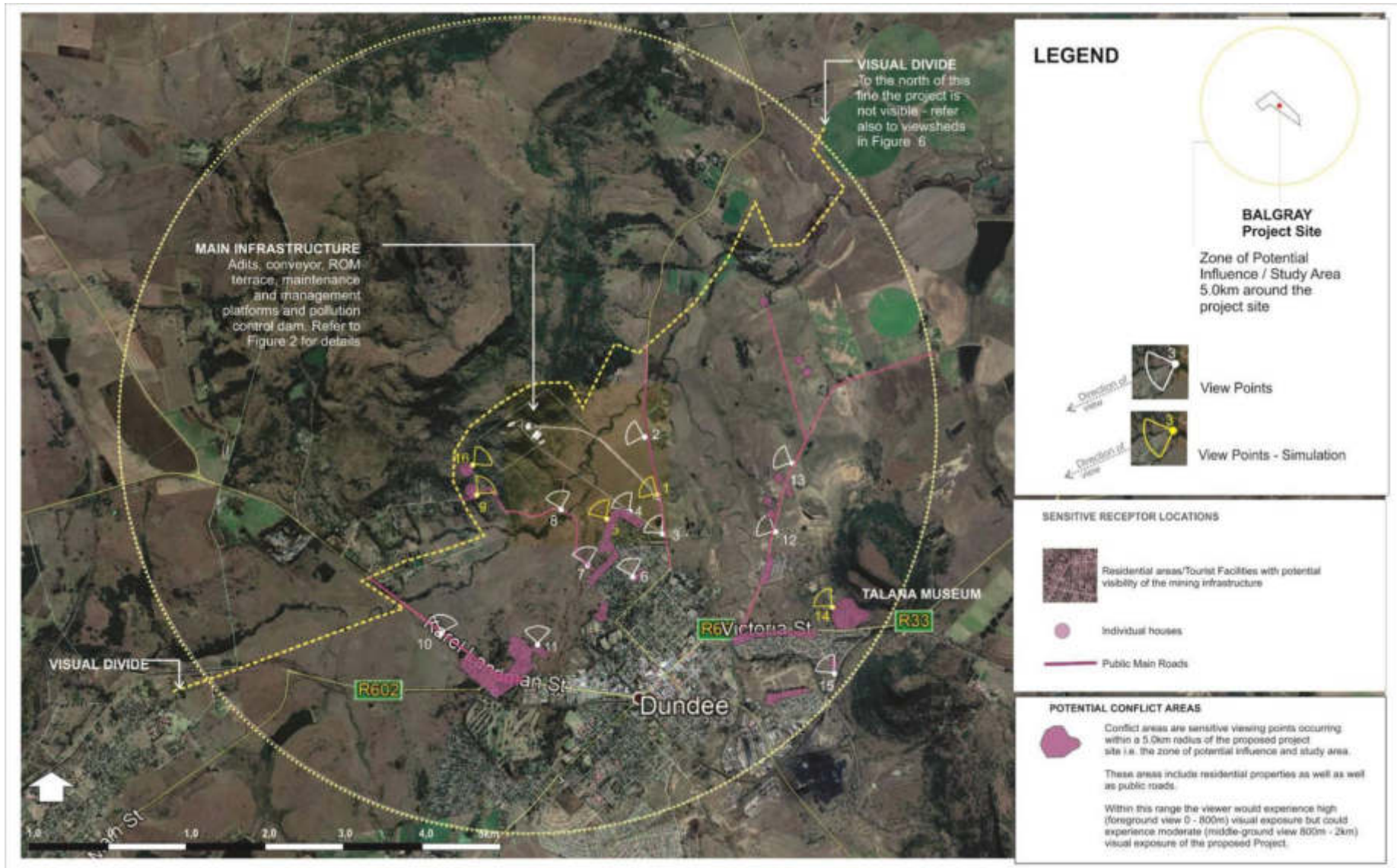


FIGURE 9-6: LOCATION OF VIEWPOINT

9.5 Biodiversity

The description of the existing biodiversity environment has been sourced from work undertaken as part of the Baseline Vegetation Biodiversity Assessment and the Baseline Faunal Biodiversity Assessment (Agreenco, August 2019 b and c), see Part C – Annexures 4 and 5.

Vegetation types

The mine lease area is located in the Gs 3 Low Escarpment Moist Grassland and Gs 4 Northern KwaZulu-Natal Moist Grassland vegetation types (Mucina & Rutherford, 2006). Refer to Figure 9-7 for the vegetation types occurring in the study area. These vegetation types are characterised by steep, mostly east- and south-facing slopes, which form part of the complex mountain topography that provide a large altitudinal range. Within these vegetation types tall closed grasslands and tall tussock grasslands are a common occurrence.

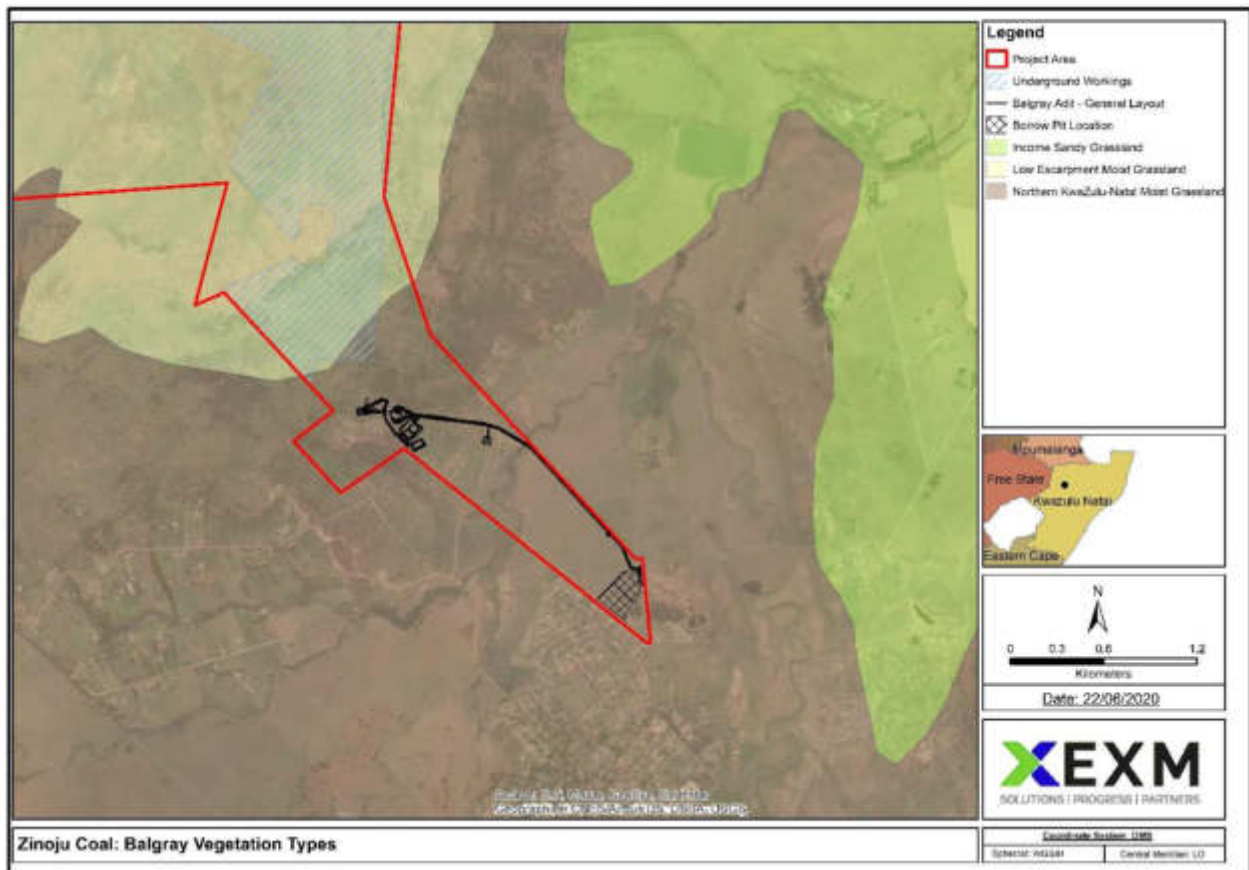


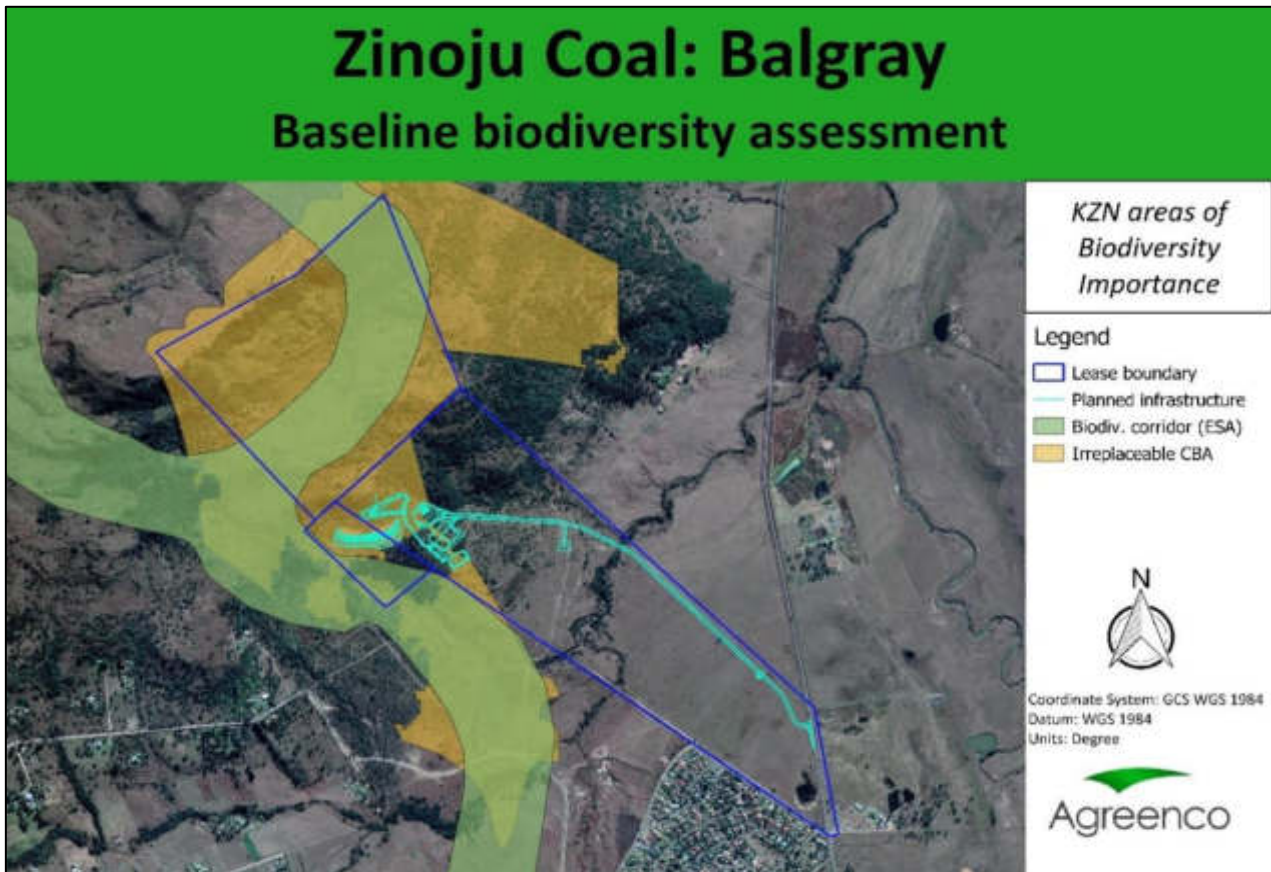
FIGURE 9-7: VEGETATION TYPES

Areas of biodiversity importance

The Balgray lease area is partly situated on one Irreplaceable Critical Biodiversity Area (CBA) and an Ecological Support Area (ESAs) as illustrated in Figure 9-8 below. Critical biodiversity areas are required to ensure that ecosystems remain functional and that viable populations of species persist. Irreplaceable CBAs are identified as having maximum irreplaceability value. Ecological Support Areas (ESAs) are required to support and sustain the ecological functioning

of CBAs. These are functional, but not necessarily pristine natural areas.

ESAs are divided into four sub-categories, namely: Systematic Conservation Assessment ESAs; Expert input ESAs; Species Specific ESAs; and Corridor ESAs. One such corridor ESA is associated with the Balgray lease. The Umzinyathi local corridor overlaps a portion of the lease. This corridor links a series of irreplaceable CBAs in the vicinity of the lease to each other.

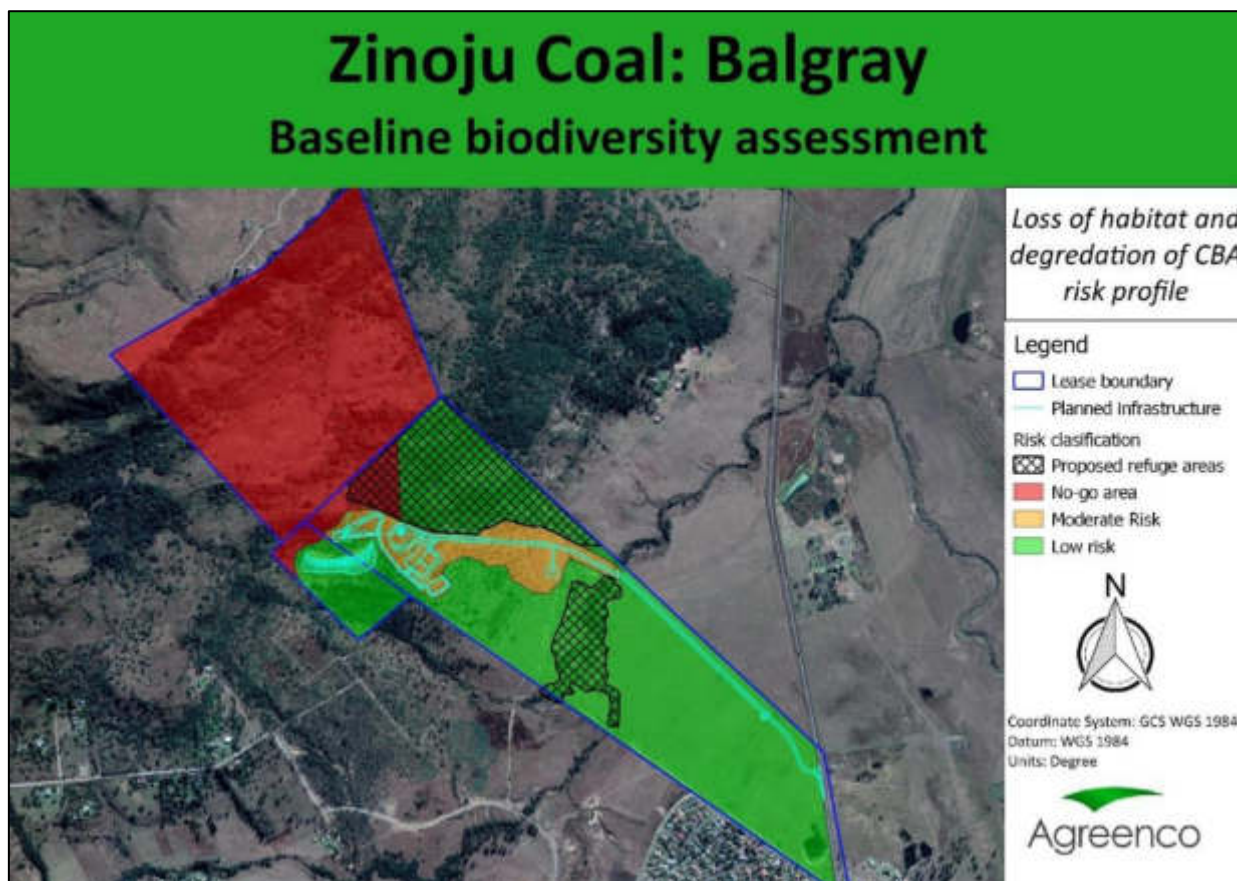


Source: Baseline Faunal Biodiversity Assessment (Agreenco, 2019b)

FIGURE 9-8: AREAS OF IMPORTANCE FOR THE CONSERVATION OF BIODIVERSITY

On site faunal findings

The faunal diversity assessment revealed a relatively low diversity of small mammals, reptiles and amphibians on the lease. Avian diversity was moderate to good at areas earmarked for the development of mining infrastructure. While some part of the reported low diversity could be ascribed to the disturbed nature of the site, timing of the surveys (autumn) could also have contributed to an under-representation of amphibian and small mammal communities. However, the desktop study revealed that numerous faunal species of conservation concern (24 bird species, seven mammal species, and one amphibian species) could possibly occur on the lease. The current survey recorded three regionally threatened bird and two regionally threatened mammal species, indicating the importance of the site for threatened species despite its disturbed nature and overall moderate to low species richness.



Source: Baseline Faunal Biodiversity Assessment (Agreenco, 2019)

FIGURE 9-9: MAP SHOWING THE AREAS OF MANAGEMENT IMPORTANCE FOR FAUNAL COMMUNITIES ON THE BALGRAY LEASE

On site vegetation findings

The vegetation assessment showed that the area has been previously substantially disturbed, exhibiting high prevalence of invasive alien plants and exotic species. It cannot be considered representative of the natural vegetation type (Gs4 - Northern KwaZulu Natal Moist Grassland) described for the area. There are, however, some pockets of natural vegetation present. No plant species of conservation concern were identified within the planned footprint of the development.

Several plant communities were identified as indicated in Figure 9-10 and summarised in Table 9-1. A broad description of the plant communities is provided based on the surveys conducted at the six sites. One vegetation community (Mountain stream community) was not surveyed in detail (no planned infrastructure or disturbances expected) and only the characteristic vegetation was described.

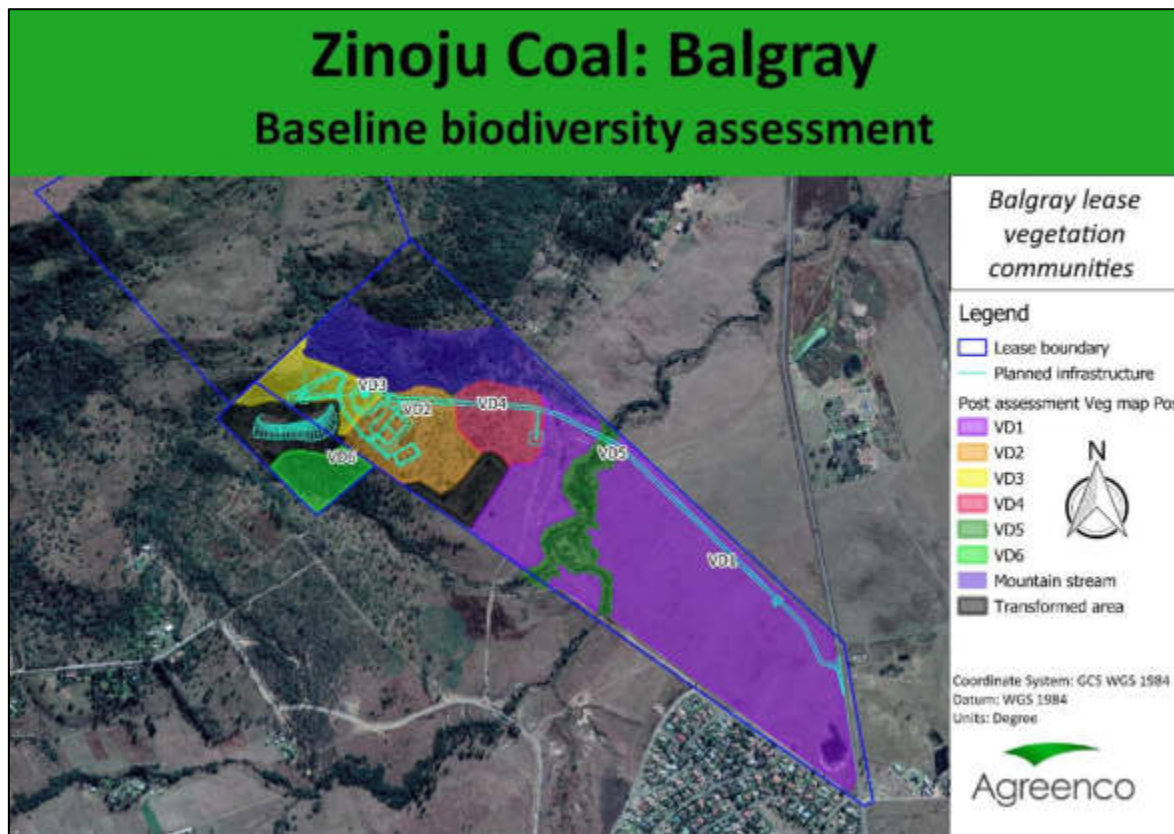


FIGURE 9-10: MAP OF DESCRIBED VEGETATION COMMUNITIES ON THE BALGRAY LEASE.

TABLE 9-1: SUMMARY OF THE VEGETATION COMMUNITIES

Site name	Short description	Community description	Area (Ha)
VD1	Grassland	<i>Paspalum notatum</i> - <i>Sporobolus africanus</i> Open Grassland	45.2
VD2	Old homestead	<i>Paspalum notatum</i> - * <i>Lantana camara</i> Homestead	10.3
VD3	Hillslope	<i>Paspalum notatum</i> - <i>Vachellia sieberiana</i> var. <i>woodii</i> Hillslope	5.7
VD4	Woodland	<i>Vachellia sieberiana</i> var. <i>woodii</i> - <i>Paspalum notatum</i> Open Woodland	6.5
VD5	Riparian	<i>Paspalum notatum</i> - * <i>Acacia dealbata</i> Riparian	6.8
VD6	Valley	* <i>Lantana camara</i> - <i>Paspalum notatum</i> Valley	4.1
Mountain stream	Mountain stream	* <i>Cotoneaster franchetii</i> - * <i>Lantana camara</i> Mountain Stream	15.6
Transformed	Transformed	Not described	9.4

9.6 Surface Water Resources

The description of the existing surface water resources has been sourced from work undertaken as part of the Freshwater Assessment (Confluent Environmental, August 2019), see Part C – Annexure 6.

According to Confluent Environmental (2019), the project area falls within quaternary catchment V32E of the Uthukela Primary Drainage region. The major river in this catchment is the Buffalo River. As a major tributary of the Thukela River, the Buffalo River has been identified in the KZN freshwater conservation plan as an important main-stem river. The Buffalo River is the longest free-flowing river system in the province, remaining un-impounded from source to sea. Free-flowing rivers are recognised internationally as significant water resources worthy of protection.

The project area is located upstream of the Sterkstroom River, which is a non-perennial 1st order tributary of the Mzinyashana River, which flows into the Sandspruit River, a tributary of the Buffalo River. Refer to Figure 9-11 for an illustration of the water courses.

The desktop study revealed the following watercourses on site:

- Sterkstroom River bisecting Craigside No.2272;
- Southern intermittent drainage line originating from Remaining Portion of 71 flowing in a south-easterly direction into the Sterkstroom River;
- Northern intermittent drainage that falls within Craigside No. 2272, flowing in a south-easterly direction into the Sterkstroom River. The lower section of this drainage flattens out into a channelled valley bottom wetland just before it enters the Sterkstroom River.

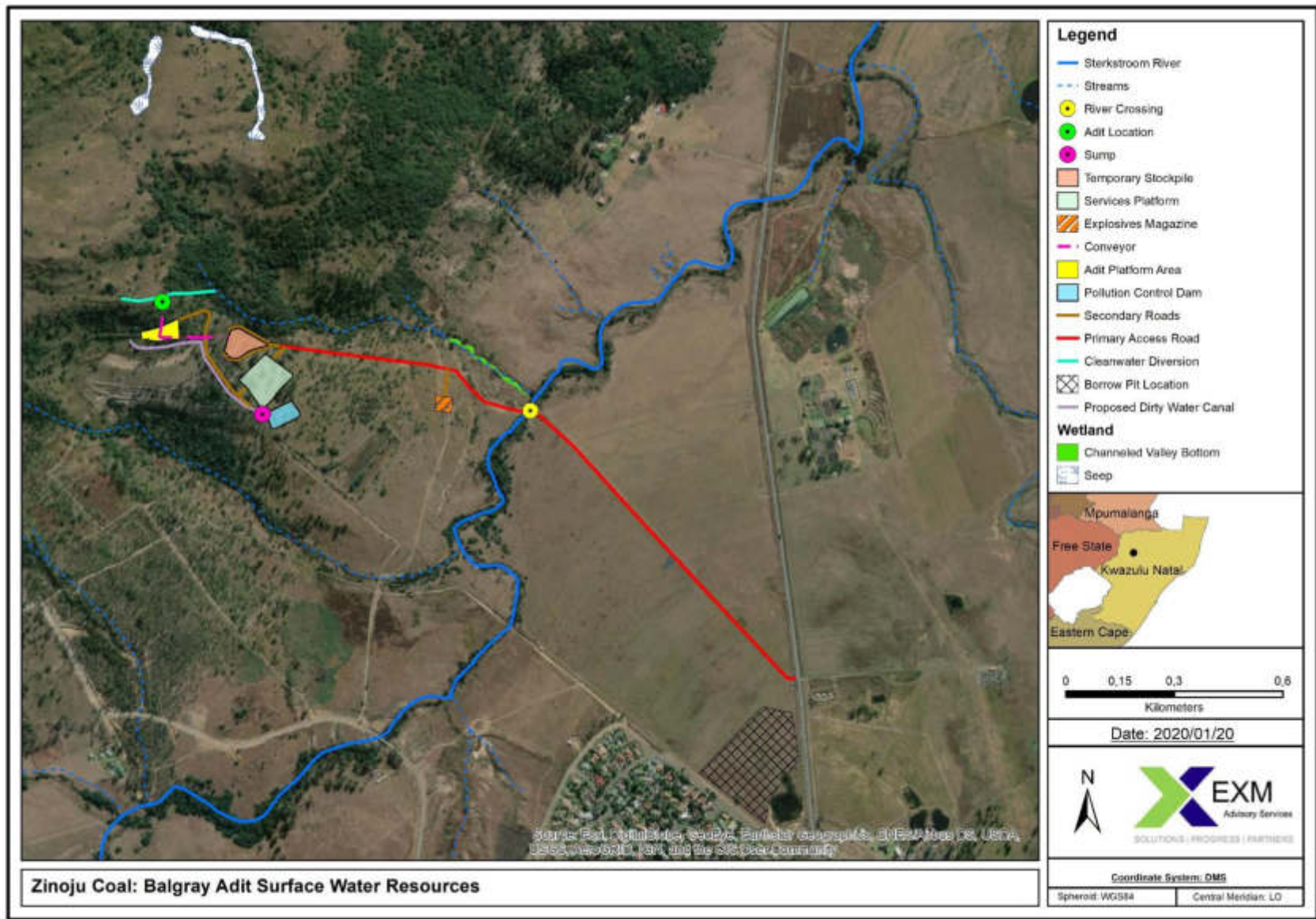


FIGURE 9-11: PROPOSED MINING INFRASTRUCTURE IN RELATION TO WATERCOURSES.

The main findings of the Freshwater Impact Assessment conducted by Confluent Environmental (2019) in term of the baseline status of the identified water courses are as follows:

- The Sterkstroom River has clearly been largely modified, primarily due to modifications to natural hydrological and geomorphological regimes which has led to a deterioration in habitat quality that is characterised by relatively deep, slow flowing pools with a muddy substrate. Fish and macroinvertebrate assemblages, therefore, show low diversity and are tolerant of slow flowing conditions. Macroinvertebrates were mostly associated with marginal and overhanging vegetation along the banks of the river.
- Water quality of the Sterkstroom River has been compromised by extensive urban and agricultural activities located upstream. This is reflected primarily in the low SASS scores for macroinvertebrates and the high prevalence of ectoparasites on fish species (particularly in the most upstream site, closest to the town of Dundee).
- The non-perennial drainage lines running along the northern and southern extent have been moderately modified, with hydrological and geomorphological functions still largely intact. The most serious impact is related to high densities of alien invasive plant species that are growing within the channel and riparian zone. Theses drainage lines are first order streams and given their non-perennial characteristics have a relatively low Ecological Importance and Sensitivity.
- All watercourses are located well outside scientifically determined buffer zones. The layout of the mine is relatively non-intrusive with respect to all watercourses and impacts are, therefore, expected to be negligible to minor, assuming the full implementation of recommended buffers and other mitigation measures.

9.7 Wetlands

The description of the wetland resources has been sourced from work undertaken as part of the Wetland Assessment (Confluent Environmental, August 2019), see Part C – Annexure 7.

Three wetlands were located in the study area. These include two high altitude hillside seeps (Western and Eastern seep) located on a flat shelf (or terrace) of the Impati Mountain and a channelled valley-bottom wetland located at the distal end of the northern non-perennial drainage line, just before its confluence with the Sterkstroom River. Refer to Plates 9-1 and 9-2 for photos of the wetlands and Figure 9-12 for the location thereof.

The wetlands were delineated by a combination of vegetation and soil wetness indicators. The seep wetlands have formed as a result of surface and sub-surface drainage from the upper-most section of the Impati Mountain spreading out over a flat shelf (i.e. a break in the slope of the mountainside with an up-slope on one side and a downslope on the other side in the same direction). The Western seep appears to be driven largely by surface flows and was dry at the

time of the visit, with the soil profile showing signs of seasonal saturation. The Eastern seep showed signs of permanent saturation and was well vegetated with obligate wetland plants including *Cyperus fastigiatus* and *Juncus effuses*.

The channelled valley-bottom wetland showed signs of gleying and mottling in the soil profile, which is indicative of a seasonal wetland system. Given its position at the end of the northern non-perennial drainage line, this wetland is only likely to receive water during the wet season after periods of high rainfall.



PLATE 9-1: PHOTOGRAPH OF THE CHANNELLED VALLEY BOTTOM WETLAND

Source: Wetland Impact Assessment (Confluent Environmental, 2019)



PLATE 9-2: EASTERN (LEFT) AND WESTERN (RIGHT) SEEP WETLANDS ON A BENCH SHELF OF THE MPATE MOUNTAIN.

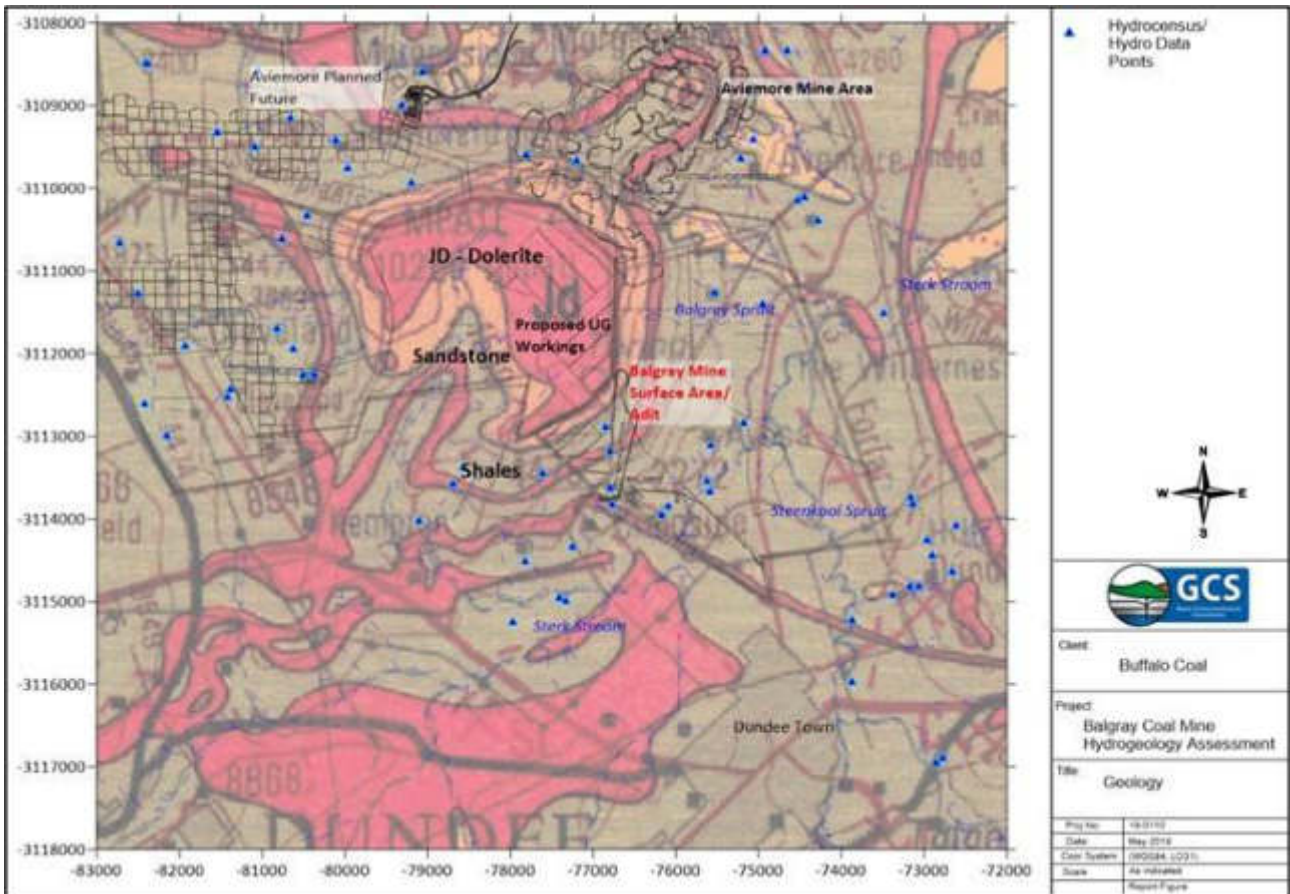
Source: Wetland Impact Assessment (Confluent Environmental, 2019)

FIGURE 9-12: LOCATION OF WETLAND AND 500M BUFFER

9.8 Geology

The description of the geological environment has been sourced from work undertaken as part of the Hydrogeological Investigation (CGS, September 2019), see Part C – Annexure 8.

The Balgray mine lease area is located on and next to the Impati Mountain with the shafts extending into the mountain. The Balgray Coal Mine area is underlain by the Vryheid and Volksrust Formations of the Ecca Group, which is part of the Karoo Supergroup. The lithological units of the Vryheid Formation are sandstone and coal layers. The Volksrust Formation consists of silty shale, mudstone and siltstone or sandstone lenses towards its upper and lower boundaries (Johnson, M.R et al 2006). All the coal seams occur within the Vryheid Formation (K & J Technical Services, 2009); refer to Figure 9-13.



Source: Hydrogeological Investigation (CGS, September 2019)

FIGURE 9-13: REGIONAL SURFACE GEOLOGY

Intensive dolerite intrusions are found in the study area, including Zuinguin and Utrecht dolerite sills and numerous steeply dipping dolerite dykes. The sills transgress the sediments along the northern escarp of the mountain, displacing the coal seams upwards to the south by 37 m to 92 m and, along the northern property boundaries of Morgenstond 3347, Seelandkop 16199 and

Langsaan 16200, a down-throw of 67 m separates a small and inaccessible reserve related to the level of the defunct St Georges Coal Mine (K & J Technical Services, 2009).

9.9 Soil

The description of the soil environment has been sourced from work undertaken as part of the Hydropedological Assessment (The Biodiversity Company, 2019), see Part C – Annexure 8.

The vegetation type occurring throughout the project area's geology is characterised by sandstones, mudstones and shales of the Karoo Supergroup's Ecca and Beaufort Group. This region is intruded by dolerites of the Jurassic age with the Bb, Ac, Fa and Ca land types being dominant throughout. Most of the area has been disturbed by historic activities and compaction has occurred.

According to the land type database (Land Type Survey Staff, 1972 - 2006), the development falls within the Fa 243, the Fa 36, the Bb 46 and the Dc 22 land types (see Figure 9-14). The Fa land type is characterised by Glenrosa and/or Mispah soil forms, which are common in this area, however, other soils may occur. Lime is rare or absent throughout the entire landscape. The Bb land type consists of plinthic catena. Upland duplex and marginalitic soils are rare and dystrophic and/or mesotrophic red soils are not widespread. The Dc land type is characterised by prisma-cutanic and/or pedocutanic diagnostic horizons with the addition of one or more of the following; vertic, melanic and red structured diagnostic horizons.

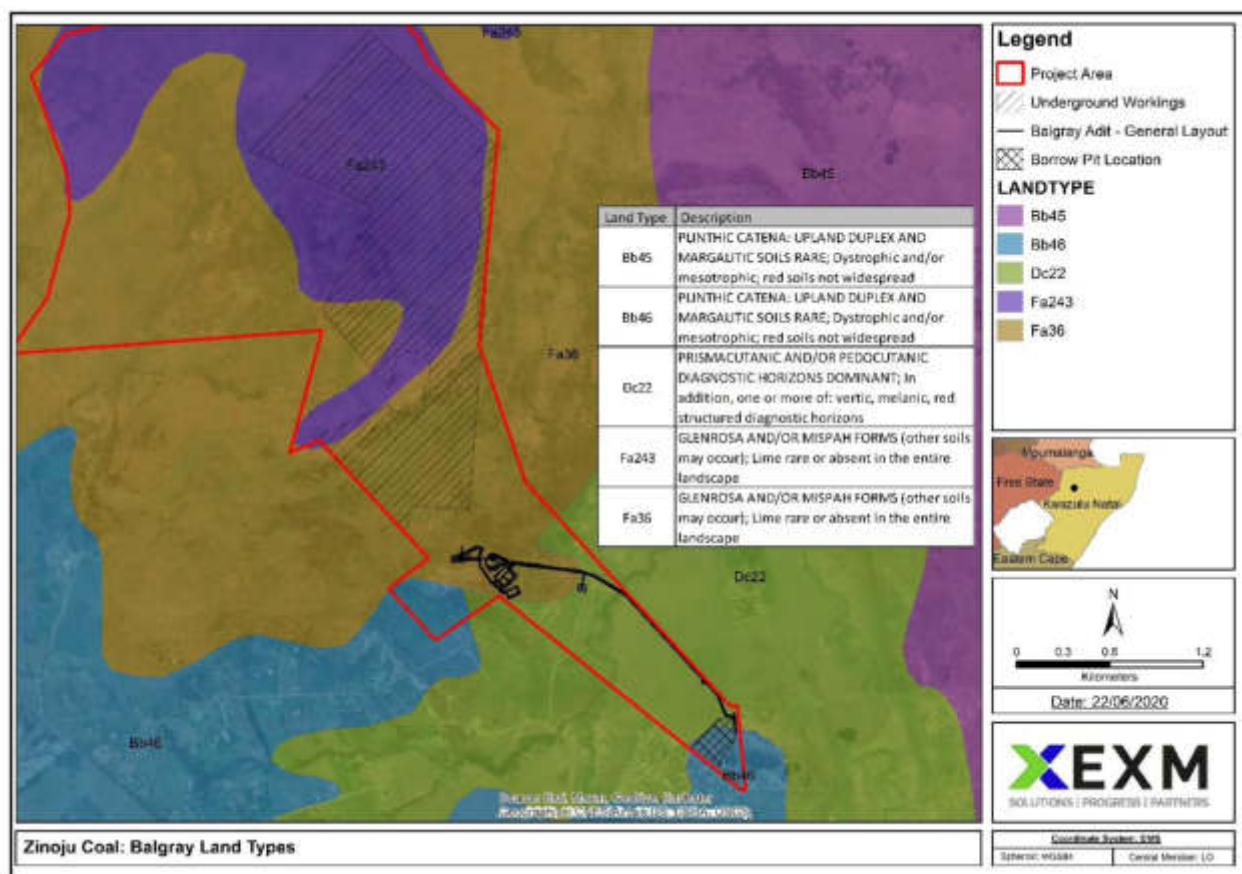


FIGURE 9-14: LAND TYPES FOR THE STUDY AREA

9.10 Groundwater

The description of the existing groundwater environment has been sourced from work undertaken as part of the Hydrogeological Investigation (CGS, September 2019), see Part C – Annexure 8.

Two distinct superimposed groundwater systems are present within the area:

- The upper weathered aquifer (shallow aquifer formed in the weathered zone of the Karoo sediments which is locally perched on the fresh bedrock);
- The aquifer below the weathered sediments (deeper aquifer formed by fracturing of the Karoo sediments and dolerite intrusions).

9.10.1 Shallow Weathered Aquifer

The Eccca sediments are weathered to depths ranging between 5 and 12 m below surface. The upper aquifer is associated with this weathered zone and groundwater is often found within a few meters below surface. This aquifer is recharged by rainfall. The percentage recharge to this aquifer is estimated to be in the order of 1 – 3% of the annual rainfall, based on work by Kirchner *et al.* (1991) and Bredenkamp (1987) in other parts of the country.

Rainfall that infiltrates the weathered rock soon reaches an impermeable layer of shale underlying the weathered zone. The movement of groundwater on top of this shale is lateral and in the direction of the surface slope. This water reappears at the surface as fountains, where the flow paths are obstructed by a barrier, such as a dolerite dyke, paleo-topographic highs in the bedrock, or where the surface topography cuts into the groundwater level at streams. It is suggested that less than 60% of the water recharged to the weathered zone eventually emanates in streams and pans.

The aquifer within the weathered zone is generally low-yielding (ranging 100 – 2000 l/h) due to its minor thickness. Few farmers therefore tap this aquifer by borehole. Wells or trenches, dug into the upper aquifer, are often sufficient to secure a constant water supply of excellent quality.

9.10.2 Fractured Rock Karoo Aquifers

The pores within the Ecca sediments are too well cemented to allow for any significant permeation of water. All groundwater movement is therefore along secondary structures, such as fractures, cracks and joints in the sediments. These structures are better developed in competent rocks such as sandstone, hence the better water-yielding properties of the latter rock type.

In terms of water quality, the fractured Karoo aquifer always contains higher salt loads than the upper weathered aquifer. These higher concentrations are attributed to the longer contact time between the water and the rock. The occasional high chloride and sodium levels are attributed to boreholes in the vicinity of areas where salts naturally accumulate on the surface, such as pans or fountains.

9.11 Groundwater quality

The description of the groundwater quality has been sourced from work undertaken as part of the Hydrogeological Investigation (CGS, September 2019), see Part C – Annexure 8.

Groundwater quality was assessed in 2017 and 2019 at various boreholes and seepage points in a 5 km radius of the site shown in Figure 9-15. A summary of the results is available in the Table 6-1 of the Hydrogeological Investigation.

The water chemistry data were compared to the 1996 DWAF Target Water Quality Guidelines for Domestic Use and the 2015 SABS SANS 241-1 Drinking Water Standards.

The following was concluded for the water quality for a sample collected from the Evaporation Pond and from Seepage collected from the old discard dump:

- High levels of EC and TDS were recorded as 368 mS/m and 3900 mg/l, exceeding both the DWAF and SANS guidelines.
- Calcium and magnesium concentrations exceeded the DWAF guideline values.

- Sulphate concentrations were very high, which exceeded both the DWAF and SANS guidelines;
- Metal concentrations (aluminium, iron and manganese) also exceeded the DWAF and SANS guidelines. The high metal concentrations at Balgray PCD and Seepage are likely a result of the low pH, which has mobilized the metals into solution.
- The EC and TDS concentrations recorded at BH3 and, at greater depths, in BH4 were slightly elevated above the DWAF guidelines, ranging between 580 and 620 mg/l and 80 and 120 mS/m, respectively. EC and TDS were below both the DWAF and SANS guidelines at all other points.

The follow was concluded for the water quality at the other sampling points:

- All sample points illustrated neutral to alkali pH conditions, ranging from 7.1 to 8.8, with the exception of Discard_S1 and Balgray PCD which displayed acidic pH levels of 2.6 and 3.1.
- The elevated EC at BH4, after 12 hours of pumping, may be attributed to the elevated chloride and sodium in the deeper aquifer, which exceeded the DWAF and/or SANS guidelines.
- Calcium concentrations exceeded the DWAF guideline at several of the sample sites. Calcium has been consistently shown, through previous studies and routine monitoring, to be naturally elevated in this area.
- Nitrite exceeded the DWAF and SANS guidelines at boreholes GBBH2 and JLBH1. This is most likely related to the farming practices in the vicinity of these boreholes, such as livestock or fertilizer application to local crops.
- Sulphate concentrations were below the DWAF and SANS guidelines at all sample sites (<150 mg/l), except Discard_S1. However, it should be noted that sulphate concentrations were higher than the average baseline concentrations at BH2, BH3 and Adit West and indicate a Moderately Low impact from the site.
- Metal concentrations (aluminium, iron and/or manganese) exceeded the DWAF and/or SANS guideline at several sample points

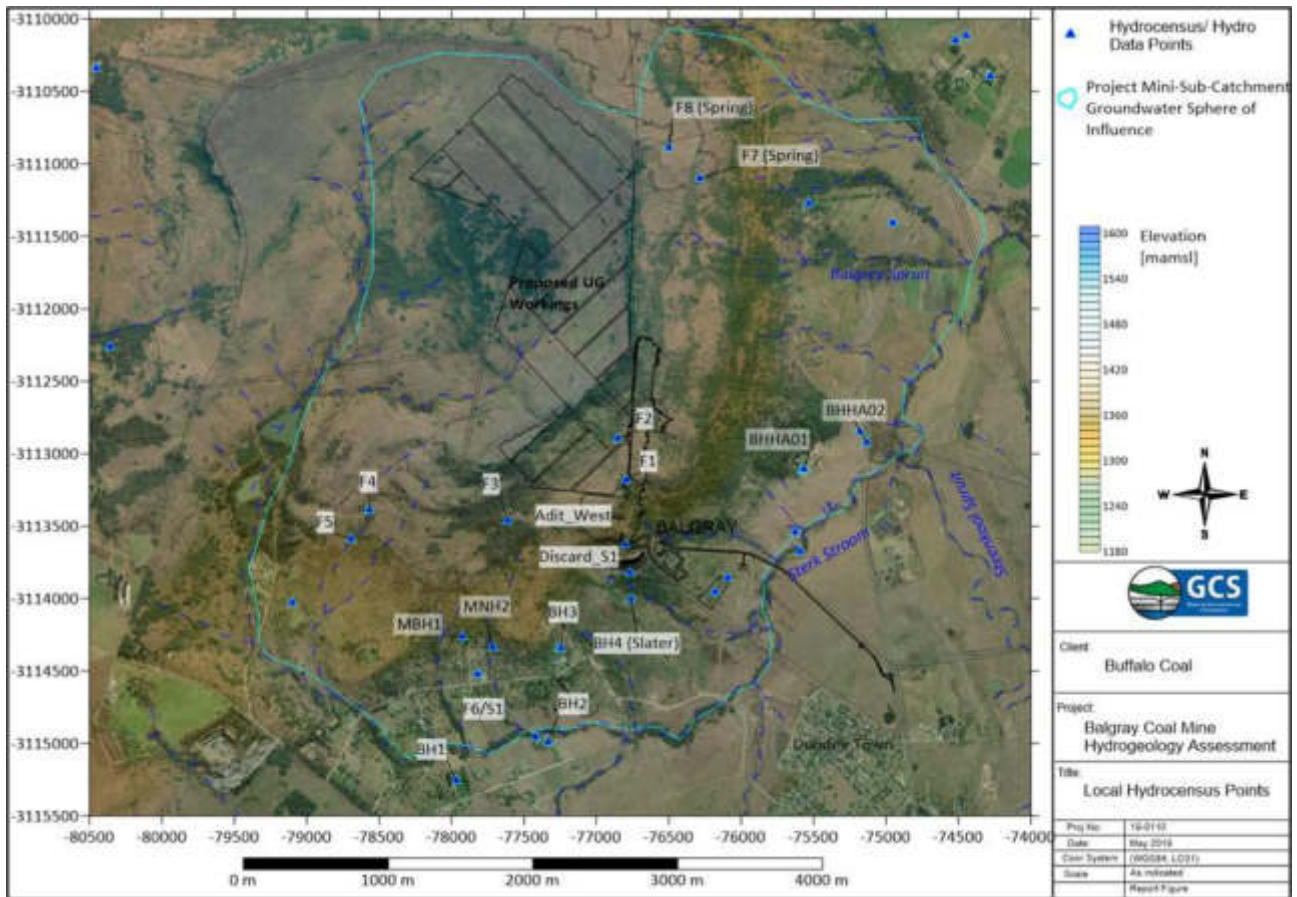
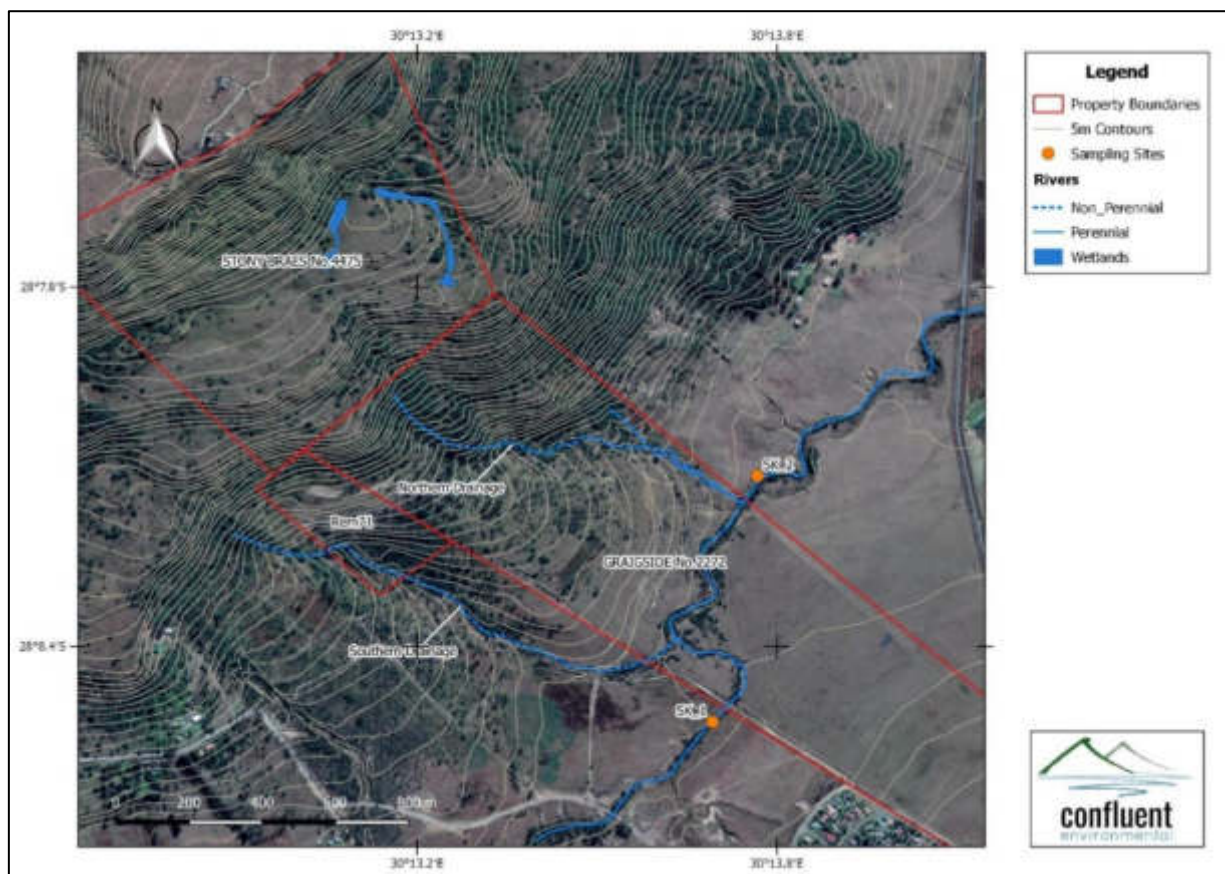


FIGURE 9-15: HYDROCENSUS AND MONITORING LOCATIONS

9.12 Surface water quality

The description of the surface water quality has been sourced from work undertaken as part of the Freshwater Assessment (Confluent Environmental, August 2019), see Part C – Annexure 6.

Two sites were sampled for water quality in the Sterkstroom River as part of the Freshwater Aquatic Impact Assessment (Confluent Environmental, 2019). The sites were located upstream (SK_1) and downstream (SK_2) of the mine development (Figure 9-17). The sampling points are also located upstream and downstream of the Northern and Southern drainage lines and, therefore, integrate impacts that may originate from these watercourses. These sites should also be sampled during the construction and operational phase of the mine to monitor impacts over time.



Source: Freshwater Impact Assessment (Confluent Environmental, 2019)

FIGURE 9-16: LOCATION OF SAMPLING SITES

The results show that conductivity and sulphate concentrations were slightly higher at SK_1 in comparison to SK. SK_1 also showed very low dissolved oxygen concentrations during the dry season survey. These results indicate that water quality appears to be impacted by a combination of urban and agricultural land use activities at SK_1 and improves slightly further downstream at SK_2. The improvement at SK_2 further indicates that current activities within the mining right have a negligible impact on water quality.

Concentrations of analysed metal concentrations were generally below detection limits at both sites apart from SK_1 which showed elevated manganese concentrations during the dry season survey. The slightly higher metal and sulphate concentrations and conductivity readings at SK_1 indicate that historical mining activities are not currently influencing water quality in the Sterkstroom River. In general, conductivity readings are higher than would be expected from a natural river and, this, together with the low dissolved oxygen concentration measured at SK_1 indicates that urban and agricultural land use activities located further upstream of mining right are the main drivers of poor water quality in the stretch of the Sterkstroom River that falls within the mining right.

TABLE 9-2: IN-SITU AND ANALYSED WATER QUALITY PARAMETERS AT SK_1 AND SK_2 IN THE STERKSTROOM RIVER.

Source: Freshwater Impact Assessment (Confluent Environmental, 2019)

Parameter	SK_1		SK_2	
	Wet	Dry	Wet	Dry
pH	7.08	7.34	7.37	9.03
DO (%)	60	25.7	54	64.9
Conductivity (µS/cm)	473	411	454	376
Temperature (°C)	19.67	8.66	20.63	10.80
Sulphate (mg/L)	44.9	69.2	42.3	64.1
Aluminium (mg/L)	<0.002	0.003	<0.002	0.003
Iron (mg/L)	<0.004	<0.004	<0.004	<0.004
Manganese (mg/L)	<0.001	0.165	<0.001	<0.001

9.13 Topography

The project area is bounded by the Impati Mountain to the North and the elevation of the adit area is in the order of 1300 mamsl. The elevation is very steep northwards towards the Impati Mountain, which is approximately 1585 m above the proposed underground workings, at its highest point. The area dipping south-east towards the pollution control dam is at an elevation of approximately 1240 mamsl (60 m lower than the adit).

9.14 Surface water hydrology

The description of the surface water hydrology has been sourced from work undertaken as part of the Surface Water Hydrology Report (cPod, August 2019), see Part C – Annexure 11.

The project area falls within the Pongola – Mtavuna Water Management Area (WMA) (previously the Thukela WMA) within the mid to upper reaches of the V32E quaternary catchment. The local river which drains all runoff emanating from the project area is the Sterkstroom River, which drains in a north-easterly direction through the site along the toe of the Impati Mountain. Downstream the river discharges to the Mzinyashana River. The Sterkstroom River has a substantial catchment upstream of the project area and notable peak flows can be expected.

Floodline modelling was undertaken for river and drainage gully sections, located within close proximity of the planned Balgray Adit infrastructure areas and the rivers or drainages which cross the proposed haul road route. The main objective of the floodline modelling assessment was to delineate the 1:50 year and 1:100 year floodlines for the site as indicated in Figure 9-17. Only the bridge crossing and a small section of the haul road will be situated within the 1:100 flood line.

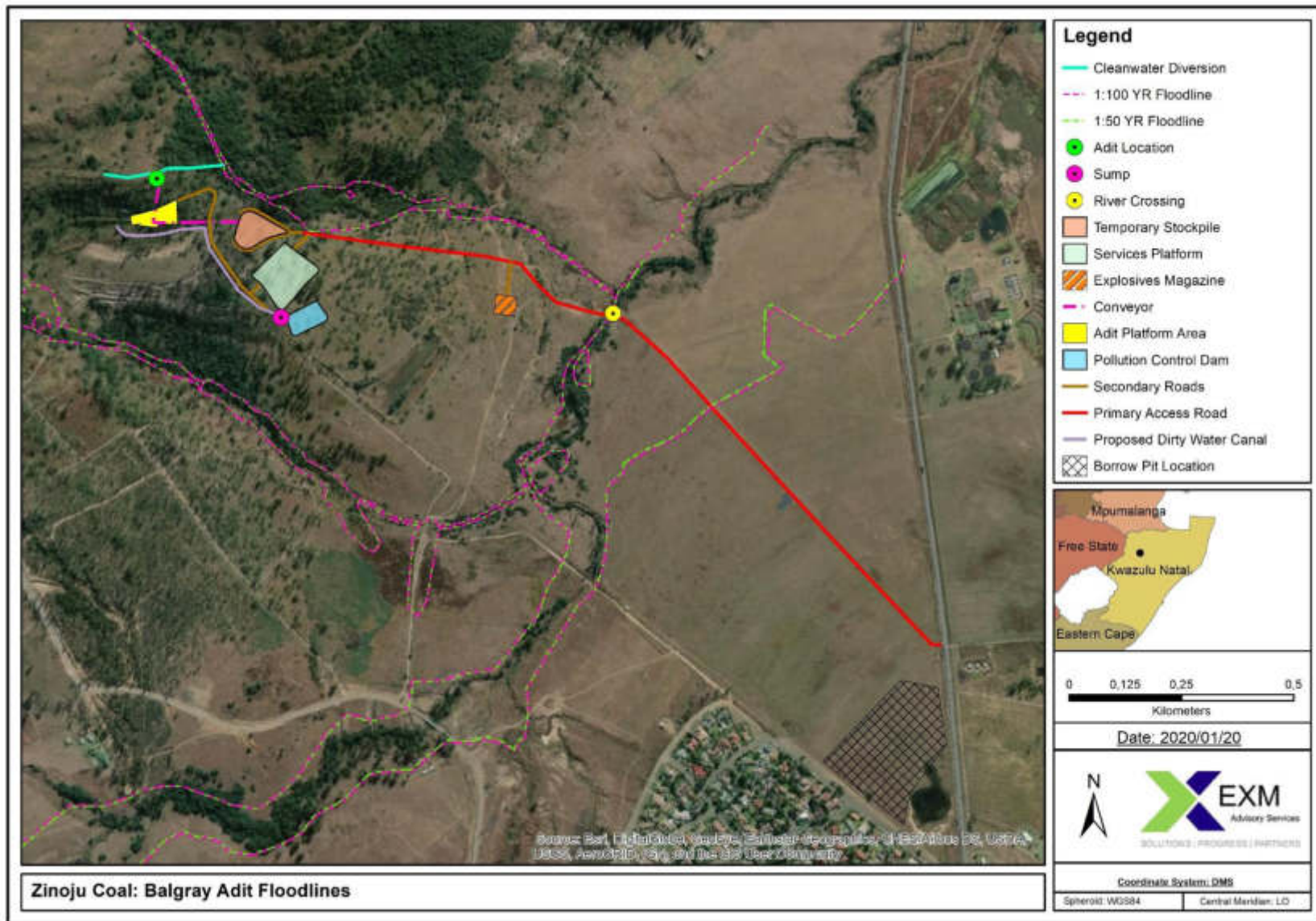




FIGURE 9-17: FLOODLINES


9.15 Cultural Heritage

The description of the heritage environment has been sourced from work undertaken as part of the Heritage Assessment (PGS Heritage, August 2019), see Part C – Annexure 9.

Fieldwork conducted as part of the Heritage Impact Assessment revealed three heritage sites in the study area as described below:

TABLE 9-3: SUMMARY OF CULTURAL HERITAGE SITES

Description of heritage resources	Photos
<p><u>BALG 1:</u></p> <p>The site comprises three mining adits located near the northern boundary of the study area. Two of the adits have brickwork supporting the shaft openings. These three adits are associated with the activities of the old Balgray Colliery. This mine appears to have operated during the 1960s until its closure in 1967. The site is not significant in terms of Heritage Resources.</p>	
<p><u>BALG 2:</u></p> <p>The poorly preserved remains of a historic farmstead were identified here. The primary tangible evidence of the site includes the foundation remains of a farmhouse (BALG 2A), poorly preserved structures associated with the farmhouse (BALG 2B) as well as a rectangular stone-packed livestock enclosure.</p> <p>The historic information indicates that the farmstead at site BALG 2 was owned and occupied by the MacPhail family. While the farmstead certainly dates from the 1950s and 1960s when Ian Alistair MacPhail and his family resided here, it also seems evident that the farmstead already existed in 1918.</p> <p>A heritage site layout plan was generated (Annexure 17) by the heritage specialist, but no mittens were discovered during the field work. A destruction permit will be obtained from the Provincial Heritage Authority (AMAFA).</p>	

Description of heritage resources	Photos
<p>BALG 3:</p> <p>The poorly preserved remains of a rectangular brick structure were identified. The site appears to be depicted as a square building that was surveyed in 1981. With no evidence to the contrary, the site is provisionally interpreted as a historic African homestead.</p>	

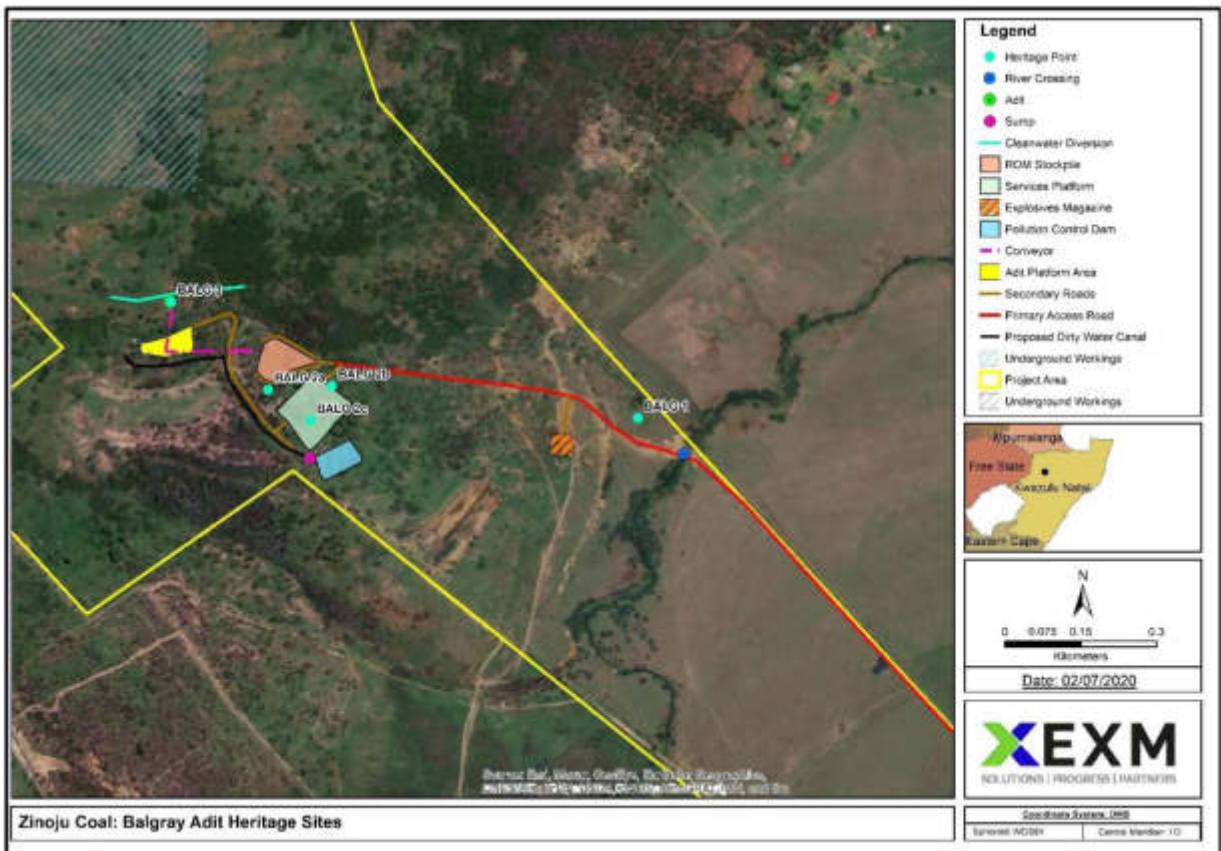


FIGURE 9-18: HERITAGE SITES IDENTIFIED

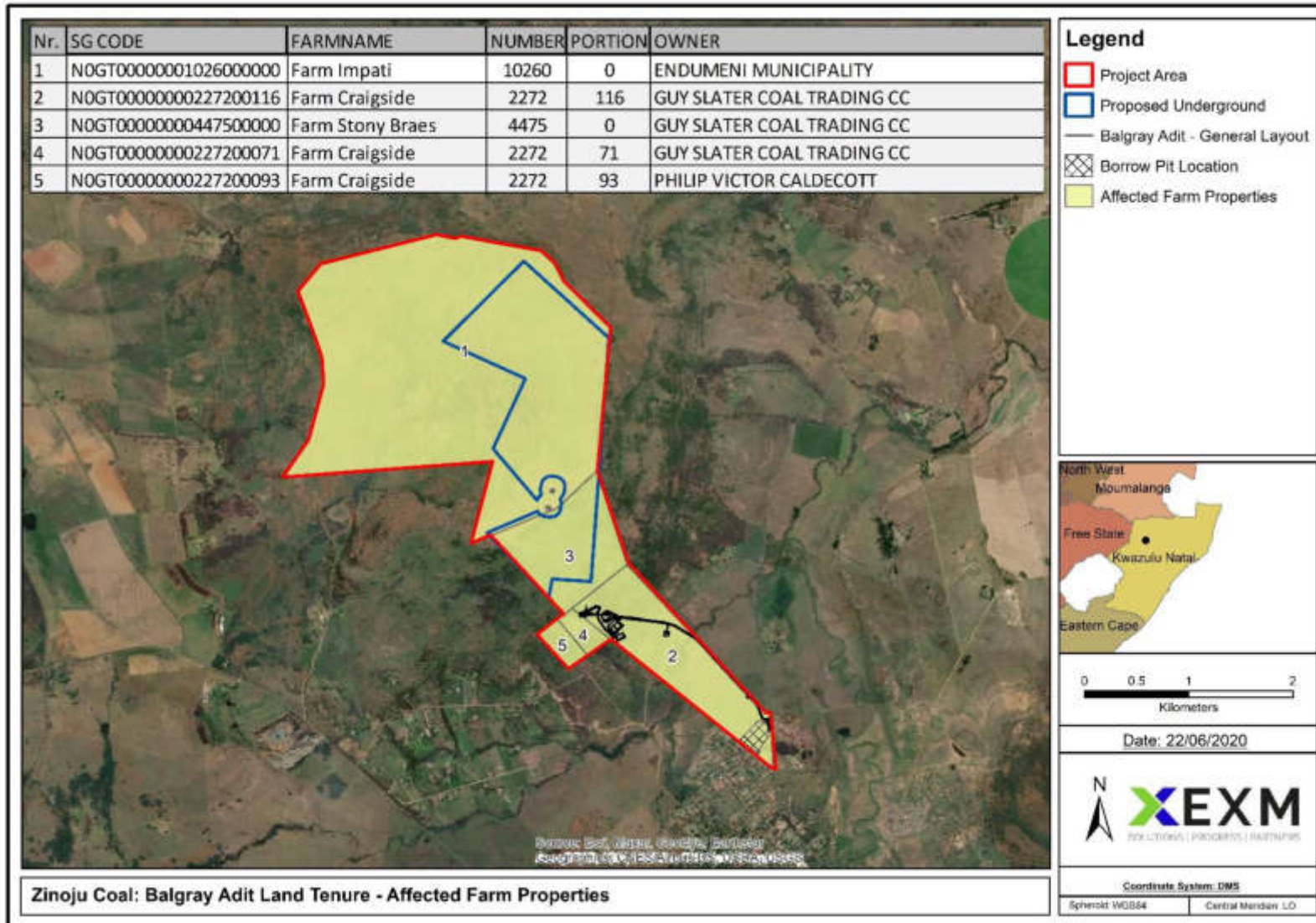
9.16 Palaeontological resources

The description of the Palaeontology environment has been sourced from work undertaken as part of the Heritage Assessment (PGS Heritage/Banzai Environmental, August 2019), see Part C – Annexure 13.

The proposed Balgray Colliery is entirely underlain by the Vryheid Formation of the Ecca Group (Karoo Supergroup). According to the PalaeoMap of South African Heritage Resources Information System the Palaeontological Sensitivity of the Vryheid Formation is Very High while the Ecca has a moderate Palaeontological Sensitivity (Almond and Pether 2008, SAHRIS website).

A site visit was conducted as part of the Palaeontology Study and no visible evidence of fossiliferous outcrops was found. For this reason, an overall low palaeontological sensitivity is allocated to the development footprint. The scarcity of fossil heritage at the proposed development footprint indicates that the impact mining development will be of a low significance in palaeontological terms.

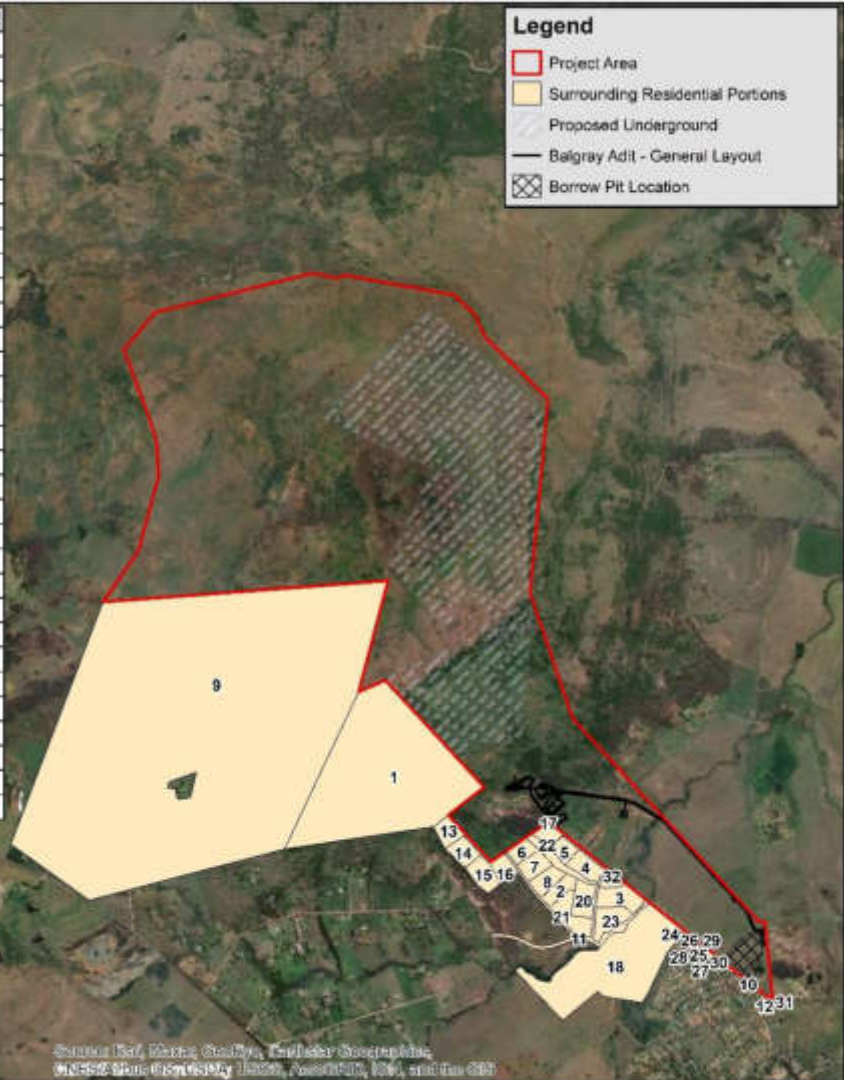
9.17 Land Tenure



21 digit Surveyor General Code for each farm portion	<u>OLD BALGRAY COLLIERY ADIT REFURBISHMENT PROJECT (SURFACE INFRASTRUCTURE)</u>
	NOGT00000000227200116
	NOGT00000000227200071
	<u>OLD BALGRAY COLLIERY ADIT REFURBISHMENT PROJECT (UNDERGROUND MINING)</u>
	NOGT00000000447500000
	NOGT000000001026000000

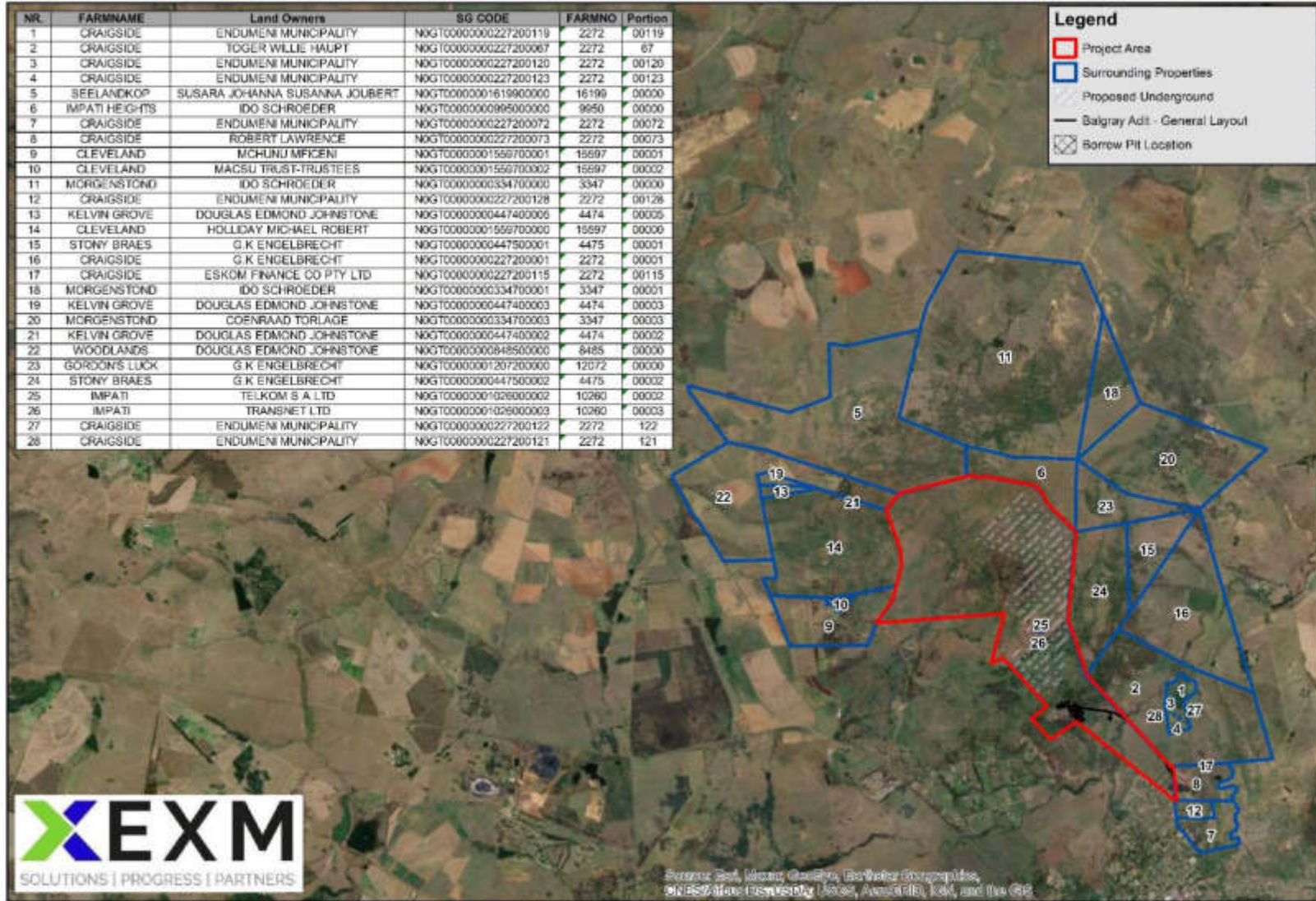
FIGURE 9-19: AFFECTED PROPERTIES

NR.	SG CODE	OWNER	ERF NR.	PORTION
1	NDGT0118000038300000	ENDUMENI MUNICIPALITY	383	0
2	NDGT01180000287900000	ENDUMENI MUNICIPALITY	2879	0
3	NDGT01180000287200000	ENDUMENI MUNICIPALITY	2872	0
4	NDGT01180000287300000	ENDUMENI MUNICIPALITY	2873	0
5	NDGT01180000287400000	ENDUMENI MUNICIPALITY	2874	0
6	NDGT01180000287600000	ENDUMENI MUNICIPALITY	2876	0
7	NDGT01180000287700000	ENDUMENI MUNICIPALITY	2877	0
8	NDGT01180000287800000	ENDUMENI MUNICIPALITY	2878	0
9	NDGT01180000379000000	ENDUMENI MUNICIPALITY	379	0
10	NDGT0118000038400001	ENDUMENI MUNICIPALITY	384	1
11	NDGT0118000038400003	ENDUMENI MUNICIPALITY	384	3
12	NDGT01180000117000000	GUNTER PETRUS JACOBUS	117	0
13	NDGT01180000285800000	ENDUMENI MUNICIPALITY	2858	0
14	NDGT01180000285900000	ENDUMENI MUNICIPALITY	2859	0
15	NDGT01180000286000000	ENDUMENI MUNICIPALITY	2860	0
16	NDGT01180000286100000	ENDUMENI MUNICIPALITY	2861	0
17	NDGT01180000287500000	ENDUMENI MUNICIPALITY	2875	0
18	NDGT01180000384000000	ENDUMENI MUNICIPALITY	384	0
19	NDGT01180000288000000	ENDUMENI MUNICIPALITY	2880	0
20	NDGT01180000288100000	ENDUMENI MUNICIPALITY	2881	0
21	NDGT01180000288200000	ENDUMENI MUNICIPALITY	2882	0
22	NDGT01180000288300000	ENDUMENI MUNICIPALITY	2883	0
23	NDGT01180000287100000	ENDUMENI MUNICIPALITY	2871	0
24	NDGT01180000232400000	ENDUMENI MUNICIPALITY	2324	0
25	NDGT01180000232300000	ENDUMENI MUNICIPALITY	2323	0
26	NDGT01180000220000000	ENDUMENI MUNICIPALITY	2200	0
27	NDGT01180000231400000	ENDUMENI MUNICIPALITY	2314	0
28	NDGT01180000231500000	ENDUMENI MUNICIPALITY	2315	0
29	NDGT01180000231600000	ENDUMENI MUNICIPALITY	2316	0
30	NDGT01180000220000000	ENDUMENI MUNICIPALITY	2200	0
31	NDGT01180000220000000	ENDUMENI MUNICIPALITY	2200	0
32	NDGT01180000288400000	ENDUMENI MUNICIPALITY	2884	0



Zinoju Coal: Balgray Adit Land Tenure - Surrounding Urban Agricultural Properties

FIGURE 9-20: SURROUNDING URBAN AGRICULTURAL PROPERTIES



Zinoju Coal: Balgray Adit Land Tenure - Surrounding Farm Properties

FIGURE 9-21: SURROUNDING FARMS

9.18 Socio-Economic Environment

The description of the socio-economic environment has been sourced from work undertaken as part of the socio-economic impact assessment (Urban Econ, September 2019), see Part C – Annexure 10.

Demographic Profile

A Socio-Economic Impacts Assessment was conducted by Urban-Econ (2019). The specific focus of the socio-economic profile is on the Endumeni and Dannhauser Local Municipalities, and the town of Dundee where the project is located.

The town of Dundee, where the proposed project is located, is the leading economic hub of the Endumeni Municipality. The town has a diversified economy characterised of economic activities ranging from retail and trade, tourism and farming.

The local municipalities of Endumeni and Dannhauser have a combined population of approximately 185 849 and a total number of households estimated at just above 41 000. Together, the two local municipalities constitute only 1.6% of the approximated total population of the KwaZulu-Natal Province.

Economy

The Endumeni Local Municipality contributes immensely towards the economy of the uMzinyathi District, accounting for just under 40% of the District's total Gross Value Added (GVA). On the other hand, the Dannhauser Local Municipality also plays an imperative role in the economy of the Amajuba District, having contributed just above 19% of the District's total GVA in 2018. Together, the two local municipalities of Endumeni and Danhausser accounted for an estimated 1.5% of the total GVA generated within the KwaZulu-Natal Province in 2018.

TABLE 9-4: GROSS VALUE ADDED, 2018

Geography	Gross Value Added (GVA), 2018
	<i>R Million</i>
South Africa	4 341 283
KwaZulu-Natal	696 458
uMzinyathi DM	13 399
Endumeni LM	5 198
Amajuba DM	28 719
Dannhauser LM	5 549

The local economy of Endumeni relies primarily on the services/tertiary sector. On the contrary, the economy of Dannhauser is dominated by the primary industries of mining and agriculture. The finding that the economy of Endumeni is now serviced based is in line with the narrative that the previously predominant sectors of mining and agriculture have been on a decline resulting in the dominance of service industries like tourism. The mining and agricultural sectors within Endumeni only contributed an estimated 17% towards the municipality's total value add of R5.2 billion in 2018.

TABLE 9-5: GVA CONTRIBUTION PER SECTOR, 2018

Sectoral category	2018 GVA contribution per sectoral category			
	Endumeni LM		Dannhauser LM	
	GVA (Rm)	Industry Contr.	GVA (Rm)	Industry Contr.
Primary	888.3	17%	3 121.7	56%
Secondary	858.4	17%	663.7	12%
Tertiary	3 451.5	66%	1 763.2	32%
Total	5 198	-	5 549	-

Employment and labour force

The unemployment rates in the KwaZulu-Natal Province (32%) and in within the local municipalities of Endumeni (29%) and Dannhauser (43%) surpass the national average of (27.8%).

This is likely as a result of the decline in the previously dominant activities of mining in both the areas of Endumeni and Dannhauser. As a result, any revival of mining activity in the areas of Endumeni and Dannhauser should be welcome provided it is in line with the relevant spatial planning requirements as well as not posing a severe threat to other priority sectors such as tourism.

9.19 Description of current land uses in the area

The proposed project will be developed on the footprint of the existing old Balgray Colliery which has been disturbed by previous activities. Infrastructure remaining from the previous activities includes the rehabilitated old discard dump, evaporation pond and stormwater canal. Some grazing is undertaken at the southern side of the lease area. The municipal sewage works is situated east of the site on the P272 road and a quarry with a quarry west of the site on the R68. The area north of the site consist mainly of natural vegetation and forms part of the Mpati mountain range. Coal mining is also conducted in the area far north of the site. Crops farming is also conducted 4.5 km west of the site.

The northern residential areas of Dundee are situated to the south-east of the project site with a small sub-division directly south of the site. Beyond this to the south and west is a golf club and additional residential areas. Immediately west of the site are peri-urban residential units, which occur mostly behind a small ridgeline west of the site. To the far south-east of the site are also residential units. Refer to Figure 9-19 for the land use map.

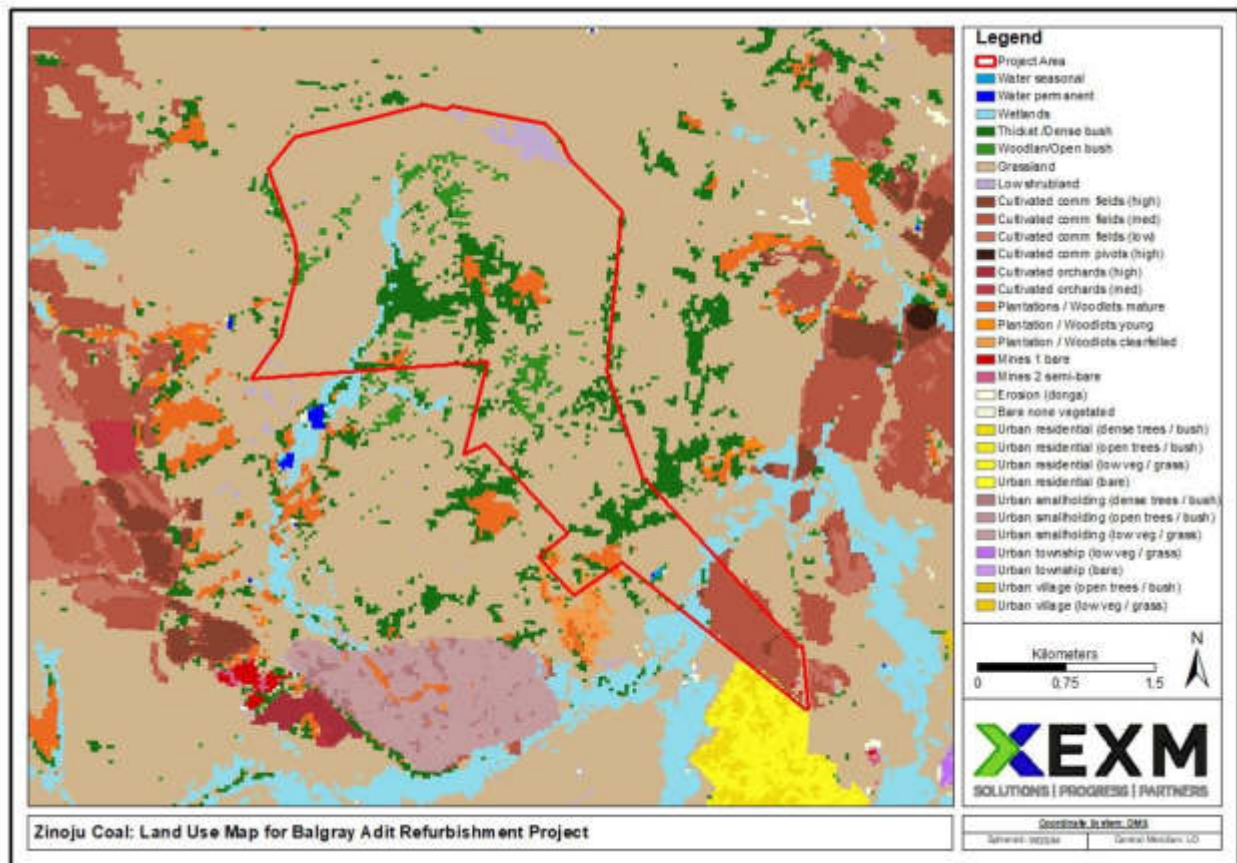


FIGURE 9-22: LAND USE MAP

9.19.1 Description of specific environmental features and infrastructure on the site

Infrastructure currently located on the site include the following:

- Three old decommissioned adits;
- Old rehabilitated discard dump;
- Dirty water trenches leading to an existing evaporation pond;
- Secondary dirt roads; and
- Power lines (not affected by infrastructure)

The vegetation assessment showed that the area has been previously substantially disturbed by previous activities, exhibiting high prevalence of invasive alien plants and exotic species. It cannot be considered representative of the natural vegetation type (Gs4 - Northern KwaZulu Natal Moist Grassland) described for the area. A CBA corridor is located north of the site, but falls outside the proposed footprint and has been demarcated as a no-go area.

Three wetlands are located in the study area. These include two high altitude hillside seeps (Western and Eastern seep) located on a flat shelf (or terrace) of the Mpate Mountain and a channelled valley-bottom wetland located at the distal end of the northern non-perennial drainage line, just before its confluence with the Sterkstroom River. These wetlands will (most likely) not be affected by the mining development.

The following watercourses are located on the lease area:

- Sterkstroom River;
- Southern intermittent drainage line flowing in a south-easterly direction into the Sterkstroom River;
- Northern intermittent drainage flowing in a south-easterly direction into the Sterkstroom River. The lower section of this drainage flattens out into a channelled valley bottom wetland just before it enters the Sterkstroom River.

The closest residents that may be impacted are situated 700 meters south-west of the site in the Craigsidde smallholdings. The closest residential area is situated 1.3 km south-east of the operational area.

Three heritage sites were identified including BALG 1 (old adits), BALG 2 (poorly preserved remains of a historic farmstead) and BALG 3 (rectangular structure which may have been a historic black homestead where the risk for the presence of unmarked stillborn graves exists). BAL 1 is of low significance and the impacts will be of a low magnitude and extent. BAL 2 and 3 is classified as Generally Protected B (GP. b) or Medium Significance and may not be disturbed without the implementation of mitigation measures.

9.19.2 Environmental and current land-use map

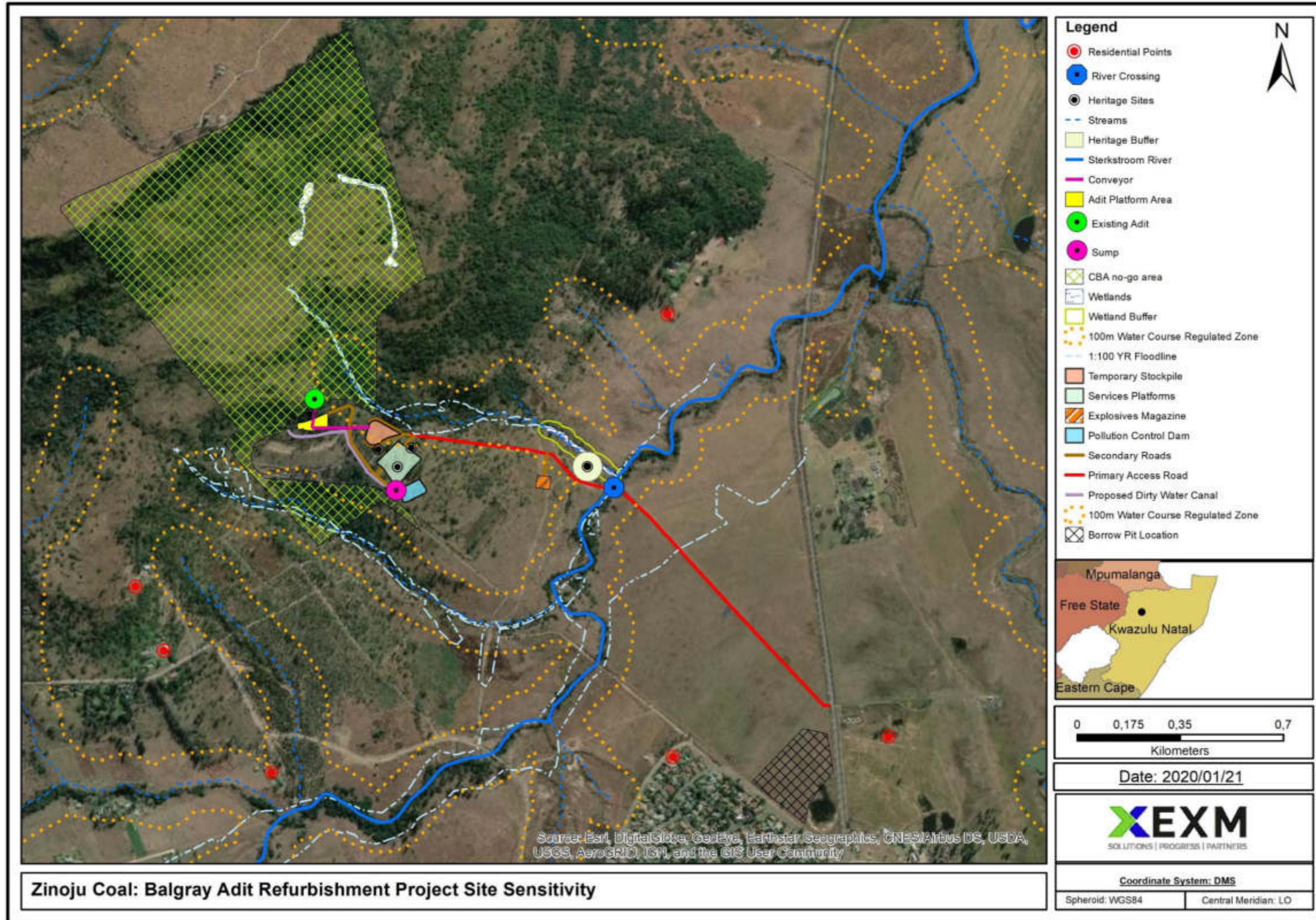


FIGURE 9-23: ENVIRONMENTAL SENSITIVITY MAP

10. IMPACTS IDENTIFIED

The list of the potential impacts of the activities that will be undertaken, as described in the initial site layout are included below. This list of impacts has been informed by both the typical known impacts of such activities and as informed by the consultation with IAPs.

10.1 Methodology used in determining the significance of environmental impacts

Impact Ranking Criteria

The impact assessment method used in this assessment takes into account the current environment, the details of the proposed amendment activities and the findings of the specialist studies. Cognisance has been given to both positive and negative impacts that may result from the developments. The significance of the impact is dependent on the consequence and the probability that the impact will occur.

$$\text{impact significance} = (\text{consequence} \times \text{probability})$$

Where:

$$\text{consequence} = (\text{severity} + \text{extent})/2$$

and

$$\text{severity} = [\text{intensity} + \text{duration}]/2$$

Each criterion is given a score from 1 to 5 based on the definitions given below. Although the criteria used for the assessment of impacts attempts to quantify the significance, it is important to note that the assessment is generally a qualitative process and therefore the application of this criteria is open to interpretation. The process adopted will therefore include the application of scientific measurements and professional judgement to determine the significance of environmental impacts associated with the project. The assessment thus largely relies on experience of the environmental assessment practitioner (EAP) and the information provided by the specialists appointed to undertake studies for the basic assessment.

Where the consequence of an event is not known or cannot be determined, the "precautionary principle" has been applied and the worst-case scenario assumed. Where possible, mitigation measures to reduce the significance of negative impacts and enhance positive impacts will be recommended. The significance of the impact in light of the mitigation measures has also been rated based on a confidence rating of the mitigation measures.

Consideration will be given to the phase of the project during which the impact occurs. The phase of the development during which the impact will occur will be noted to assist with the scheduling and implementation of management measures.

Criteria for Assessing the Impact Significance

Severity Criteria

INTENSITY = MAGNITUDE OF IMPACT	RATING
Insignificant: impact is of a very low magnitude	1
Low: impact is of low magnitude	2
Medium: impact is of medium magnitude	3
High: impact is of high magnitude	4
Very high: impact is of highest order possible	5

DURATION = HOW LONG THE IMPACT LASTS	RATING
Very short-term: impact lasts for a very short time (less than a month)	1
Short-term: impact lasts for a short time (months but less than a year)	2
Medium-term: impact lasts for the for more than a year but less than the life of operation.	3
Long-term: impact occurs over the operational life of the proposed mine.	4
Residual: impact is permanent (remains after mine closure)	5

EXTENT = SPATIAL SCOPE OF IMPACT/ FOOTPRINT AREA / NUMBER OF	RATING
Limited: impact affects the mine site	1
Small: impact extends to the whole farm portion	2
Medium: impact extends to neighbouring properties	3
Large: impact affects the surrounding community	4
Very Large: The impact affects an area larger the municipal area	5

Probability

PROBABILITY = LIKELIHOOD THAT THE IMPACT WILL OCCUR	RATING
Highly unlikely: the impact is highly unlikely to occur	0.2
Unlikely: the impact is unlikely to occur	0.4
Possible: the impact could possibly occur	0.6
Probable: the impact will probably occur	0.8
Definite: the impact will occur	1

Impact Significance

NEGATIVE IMPACTS

≤1	Very low	Impact is negligible. No mitigation required.
>1≤2	Low	Impact is of a low order. Mitigation could be considered to reduce impacts. But does not affect environmental acceptability.
>2≤3	Moderate	Impact is real but not substantial in relation to other impacts. Mitigation should be implemented to reduce impacts.
>3≤4	High	Impact is substantial. Mitigation is required to lower impacts to acceptable levels.
>4≤5	Very High	Impact is of the highest order possible. Mitigation is required to lower impacts to acceptable levels. Potential Fatal Flaw.

POSITIVE IMPACTS

≤1	Very low	Impact is negligible.
>1≤2	Low	Impact is of a low order.
>2≤3	Moderate	Impact is real but not substantial in relation to other impacts.
>3≤4	High	Impact is substantial.
>4≤5	Very High	Impact is of the highest order possible.

DEVELOPMENT PHASE

C	Impact is applicable to the CONSTRUCTION PHASE ONLY
O	Impact is applicable to the OPERATIONAL PHASE ONLY
C&O	Impact is applicable to the CONSTRUCTION AND OPERATIONAL PHASE

10.2 The possible mitigation measures that could be applied and the level of I risk.

The mitigation measures for each of the identified impacts are included in Section 11 and in the EMPr in part B.

The significance of the impact with mitigation has been weighted by multiplying the significance rating without significance by the following depending on the confidence placed in the successful implementation of the mitigation measures or the effectiveness of those measures in reducing the impact.

1	Very low	Measures are very difficult or expensive to implement or are not expected to be effective in reducing the impact (No Confidence)
0.8	Low	Measures are difficult or expensive to implement or are expected to have limited effectiveness in reducing the impact (20% Confidence)

0.5	Moderate	Measures can be implemented with some effort and cost and/or the measures can be effective in mitigating the impact if implemented (50% Confidence)
0.2	High	There is high confidence that mitigation measures can be implemented and can be effective in mitigating the impact (80% Confidence)

10.3 The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

NOTE: A COMPREHENSIVE ASSESSMENT OF ALL IMPACTS IS GIVEN IN SECTION 11. A SHORT DESCRIPTION OF KEY IMPACTS AS DESCRIBED IN THE SPECIALIST STUDIES IS PROVIDED 10.3

10.3.1 Air Quality

The description of the air quality impacts has been sourced from work undertaken as part of the Air Quality Impact Assessment (Agreenco, September 2019), see Part C – Annexure 1.

The sources identified that may contribute to dust generation and air quality impacts were the conveyor belt (continuous transport source), unloading material from the stockpile to trucks using front-end loaders and vehicle entrained dust from trucks driving on unpaved Roads. From these sources, the emission factor was the highest for the vehicle entrained dust.

The emissions were modelled using the US EPA AERMOD regulatory dispersion model. The sources were modelled for TSP (fugitive dust) on a 24-hour and monthly average and for PM10 on a 24-hr and annual average. The results showed the highest dust risk for exceedances is vehicle-entrained dust from the access road, followed by loading material from the stockpiles to trucks using a front-end loader.

According to these model outputs for TSP and PM10 as indicated in Figures 10-1 to 10-3, there won't be a high dust risk to the surrounding areas. However, the PM10 outputs based on a 24-hr average indicate concentrations slightly above the limits at the northernmost corner of Dundee closest to the colliery; therefore, under extreme weather or operational conditions there could be some exceedances.

The borrow pit has the potential to result in dust generation and nuisance conditions for the Dundee residents south of the site. The borrow pit will only be operational for a relative short period (approximately 11 months) and will thereafter be rehabilitated.

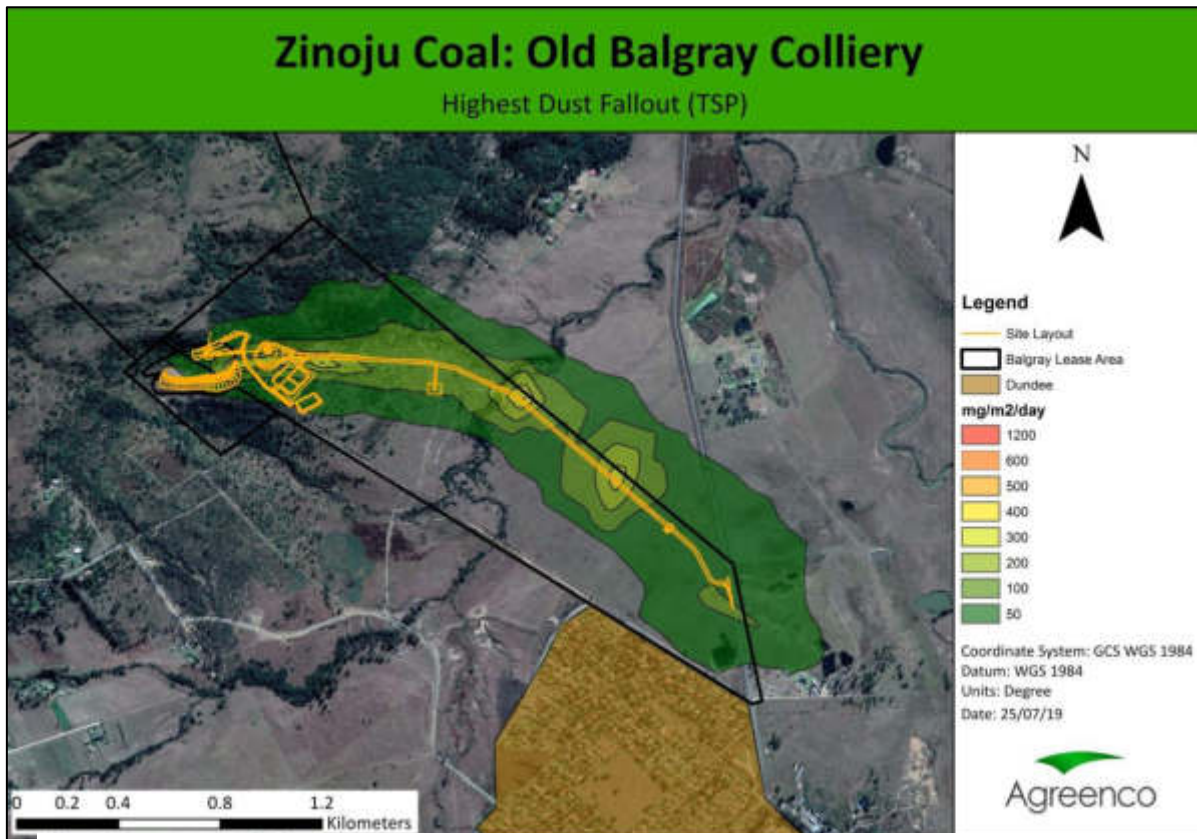


FIGURE 10-1: THE HIGHEST EXPECTED DUST FALLOUT PER DAY

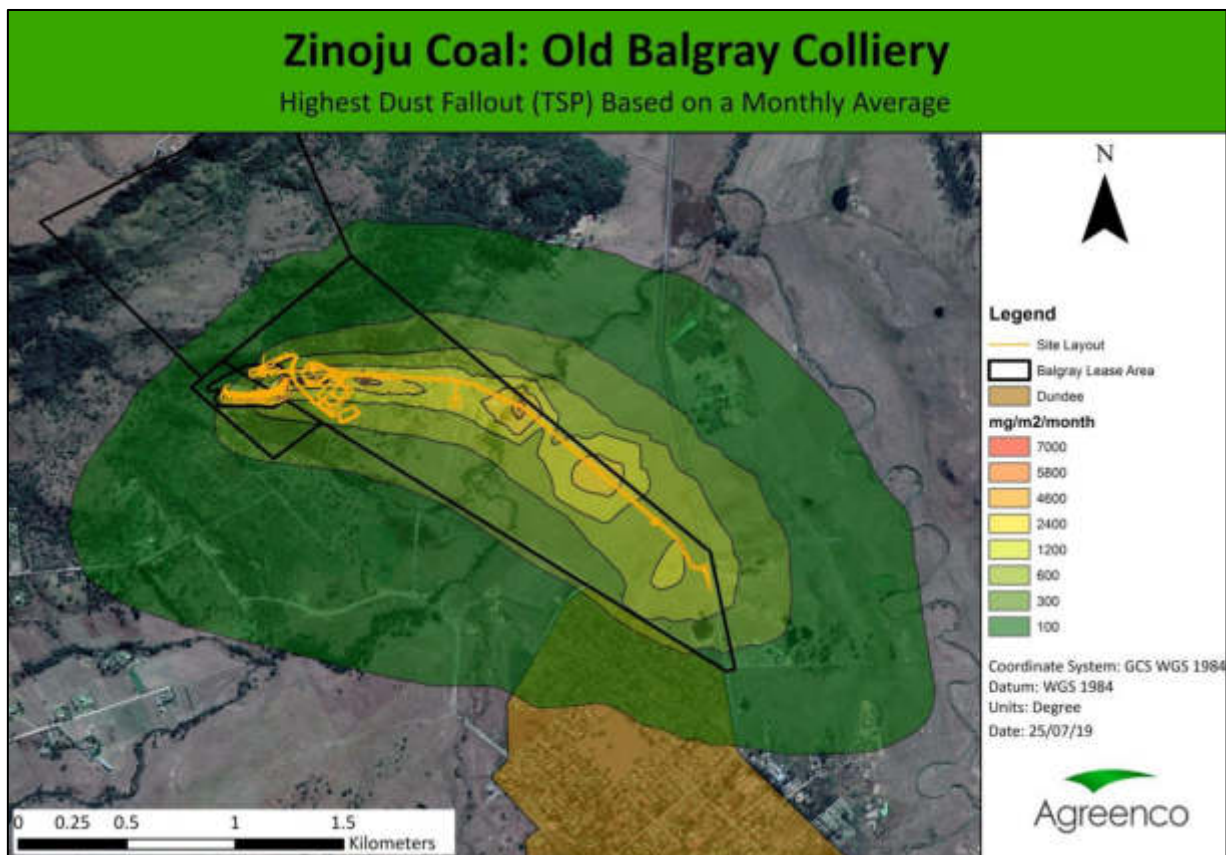


FIGURE 10-2: THE HIGHEST DUST FALLOUT FOR THE SITE ON A MONTHLY AVERAGE

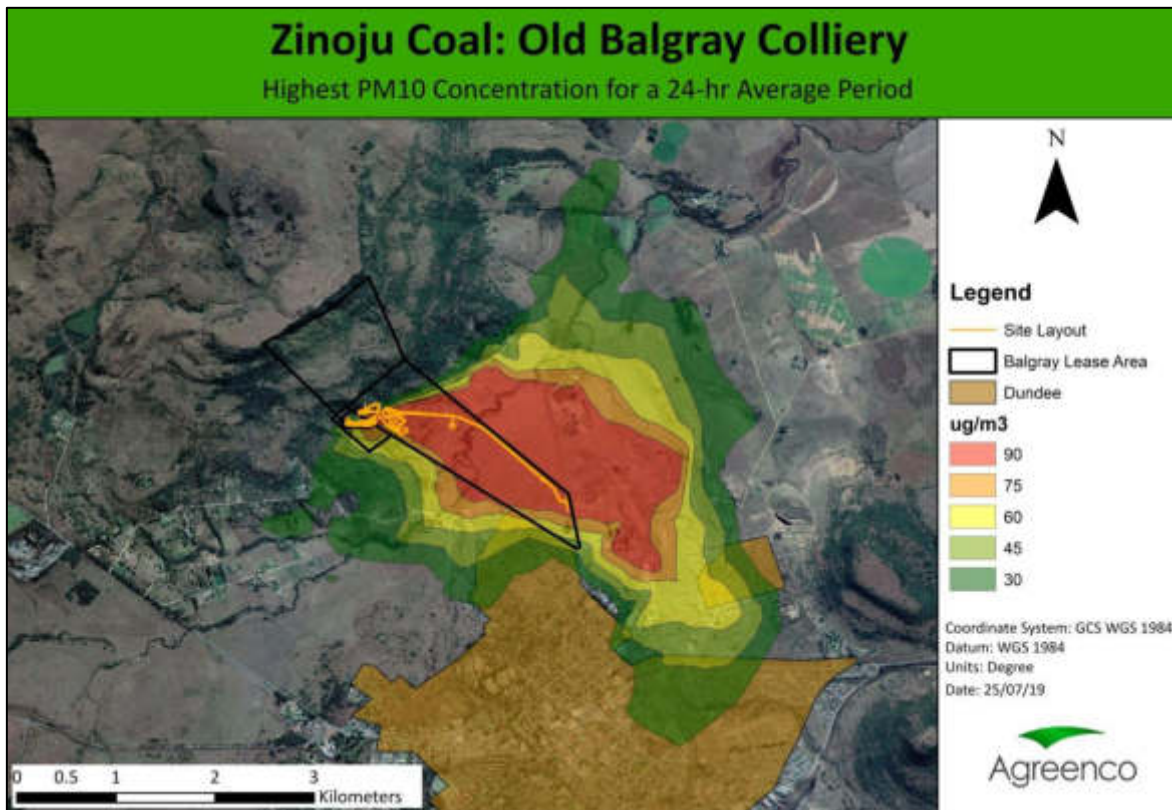


FIGURE 10-3: THE HIGHEST EXPECTED PM10 CONCENTRATIONS ON A DAILY AVERAGE

During the construction phase and without mitigation, dust generation as a result of vegetation clearance, road construction activities and vehicle-entrained dust were classified as “medium” risk for nuisance dust and an environmental and health risk and low after mitigation measures have been applied.

During operation dust generation from the conveyor belts and material transferred by trucks due to wind erosion on the material were assessed as “medium” risk for nuisance dust and environmental and health risk without mitigation and low after the application of mitigation measures. Dust from loading material from the ROM stockpile onto trucks, dust generated at the outlet of the conveyor belt and vehicle-entrained dust were assessed as “high” risk sources for nuisance dust and an environmental and health risk without mitigation and low after the application of mitigation measures.

During the decommissioning and closure phase, dust from unvegetated areas resulting in nuisances dust and vehicle-entrained dust, pre-mitigation resulting in a nuisance and environmental health risk were assessed as a “medium” risk.

10.3.2 Noise

The description of the noise impacts has been sourced from work undertaken as part of the Noise Impact Assessment (Enviro Acoustic Research, August 2019), see Part C – Annexure 2.

Activities that may contribute to noise generation during the construction phase include grading, bulldozing, drilling operation, vehicles travelling on access road and secondary roads. Activities that may contribute to noise generation during the operational phase include conveyor belt, ventilation fan, front end loader, haul trucks and ramp.

A conceptual noise model (Figures 10.1-10.6 of the Noise impact Assessment) was created by the specialist to predict the potential noise levels at the Noise Sensitive Receptor (NCR) as a result of the proposed mining project. The models show the noise levels during the night and day times as well as the scenarios where no mitigation has been applied

Considering the developmental nature of the area, the acceptable rating level would be typical of a rural noise district, set as:

- A daytime rating level of 45 dBA.
- A night-time rating level of 35 dBA.

Considering the requirements of the NCR and the recommended noise limits of the International Finance Corporation, the activities from the mine should not increase the total noise levels above the following noise levels:

- 55 dBA during the daytime; and
- 45 dBA during the night-time.

Figures 10-4 and 10-5 below provides an example of the noise model created for operational phase during night-time. It shows that the noise levels will be high for resident immediate west of site, but the application of the mitigation measures will reduce noise to the above acceptable levels.

Construction

The main source of noise during the construction phase would be from the drilling activities associated with the ventilation shaft. While this may be highly temporary (until the shaft is a few meters deep when the walls will start to limit the propagation of noise), mitigation measures are required as it will be generating noises at night that some receptors will consider disturbing. The borrow pit will result in increased noise levels for Dundee residents south of the site. The borrow pit will only be operational for a relative short period (approximately 11 months) and will thereafter be rehabilitated. The borrow pit will only be operated in daylight hours 06:00-16:00 summer and winter 07:00-15:00.

Operational

The main source of noise during the operational phase would be from the ventilation fan.

Mitigation measures are required as the ventilation fan can generate noise levels that may be considered disturbing by the closest receptors.

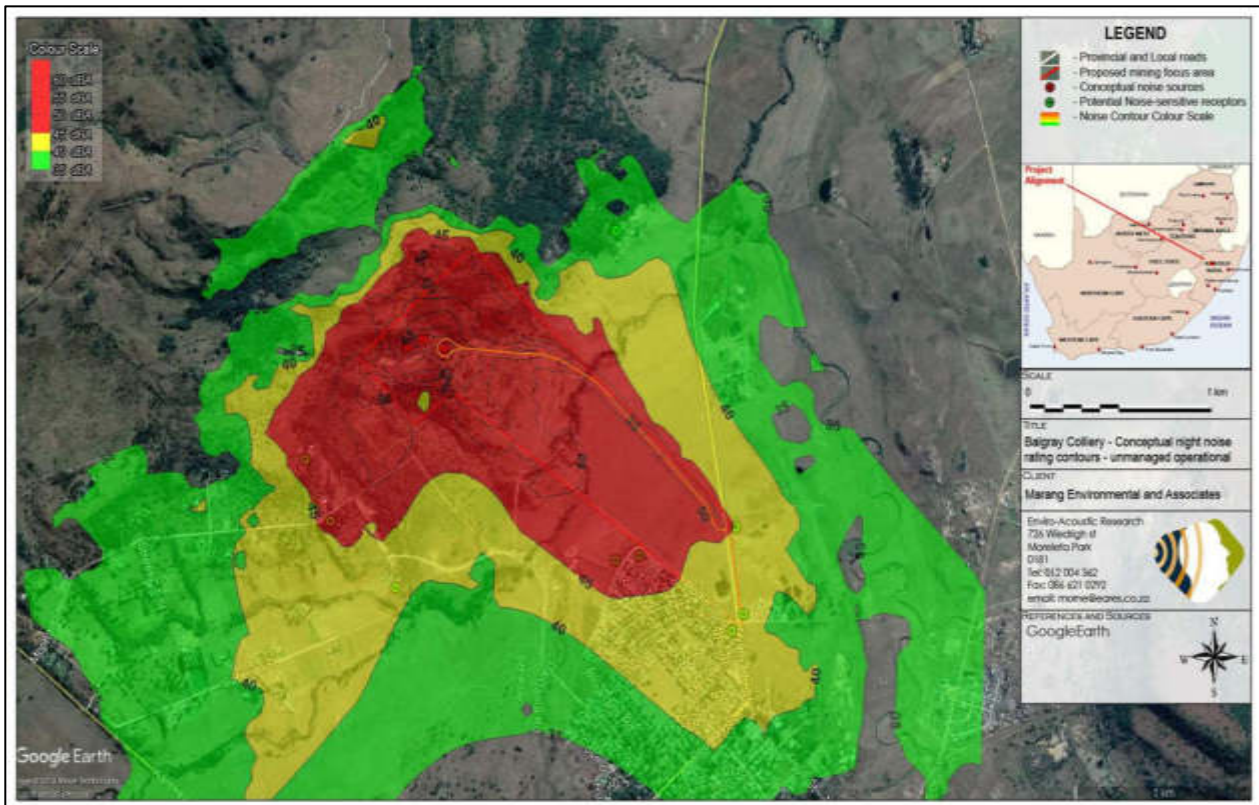


FIGURE 10-4: PROJECTED CONCEPTUAL FUTURE NIGHT-TIME OPERATIONAL NOISE RATING LEVELS – UNMANAGED OPERATION

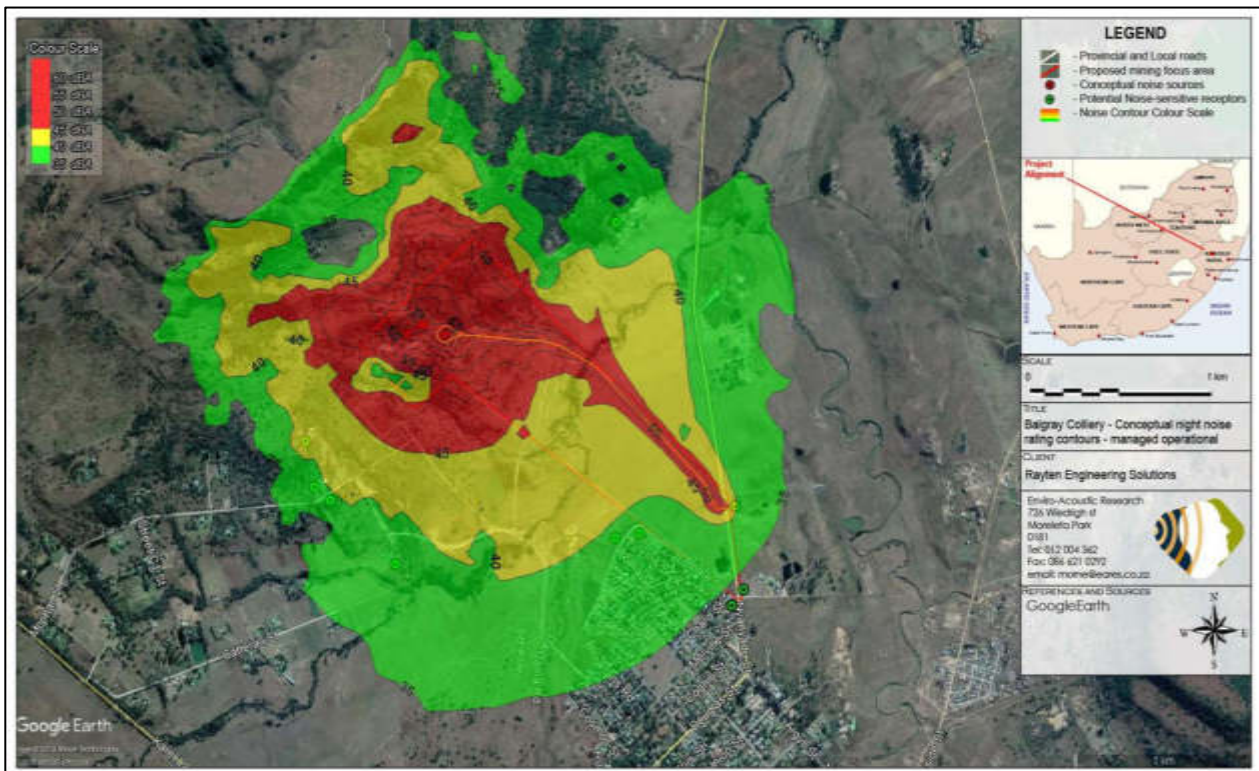


FIGURE 10-5: PROJECTED CONCEPTUAL FUTURE NIGHT-TIME OPERATIONAL NOISE RATING

LEVELS – MANAGED OPERATION

10.3.3 Visual

The description of the visual impacts has been sourced from work undertaken as part of the Visual Impact Assessment (Newtown Landscape Architects, August 2019), see Part C – Annexure 3.

Visual impacts occur when changes in the landscape are noticeable to viewers looking at the landscape from their homes or travel routes, and important cultural features and historic sites, especially in foreground views.

Visual impacts will be caused by activities and infrastructure in all project phases i.e. establishment, operational and closure. Activities associated with the project will be visible (day and night), to varying degrees from varying distances around the project site. During the establishment phase the Project's visibility will be influenced due to site preparation activities. During operation and closure phases the visibility of the project will reduce as the side slopes and terraces are rehabilitated and ultimately the infrastructure is removed. The movement of trucks within and to and from the site will also influence visibility.

The project and its activities will be highly visible from sensitive viewing areas immediately west of the project site, in particular two residences within 1,0 km of the site, which will experience high exposure. It will also be visible from sensitive areas in a general arc from the south-west through to the south-east of the project site, although, exposure will be moderate to low as the closest residences are 1,5 km from the site. The significance of impact on these areas is high (area immediately west of the site) and moderate to low for the remainder of the study area. The impact on the main tourist attraction in the study area, the Talana Museum would be insignificant due to its distance from the site (4,6 km).

The borrow pit will result in visual intrusion for Dundee residents south of the borrow pit. This impact has been rated high significance prior to mitigation and moderate post mitigation. The borrow pit will only be operational for a relative short period (approximately 11 months) and will thereafter be rehabilitated.

Figure 10-6 provides a viewshed analysis to show the visibility of the project in terms of visual receptors in the surrounding area as well as the intensity of the visual intrusion.

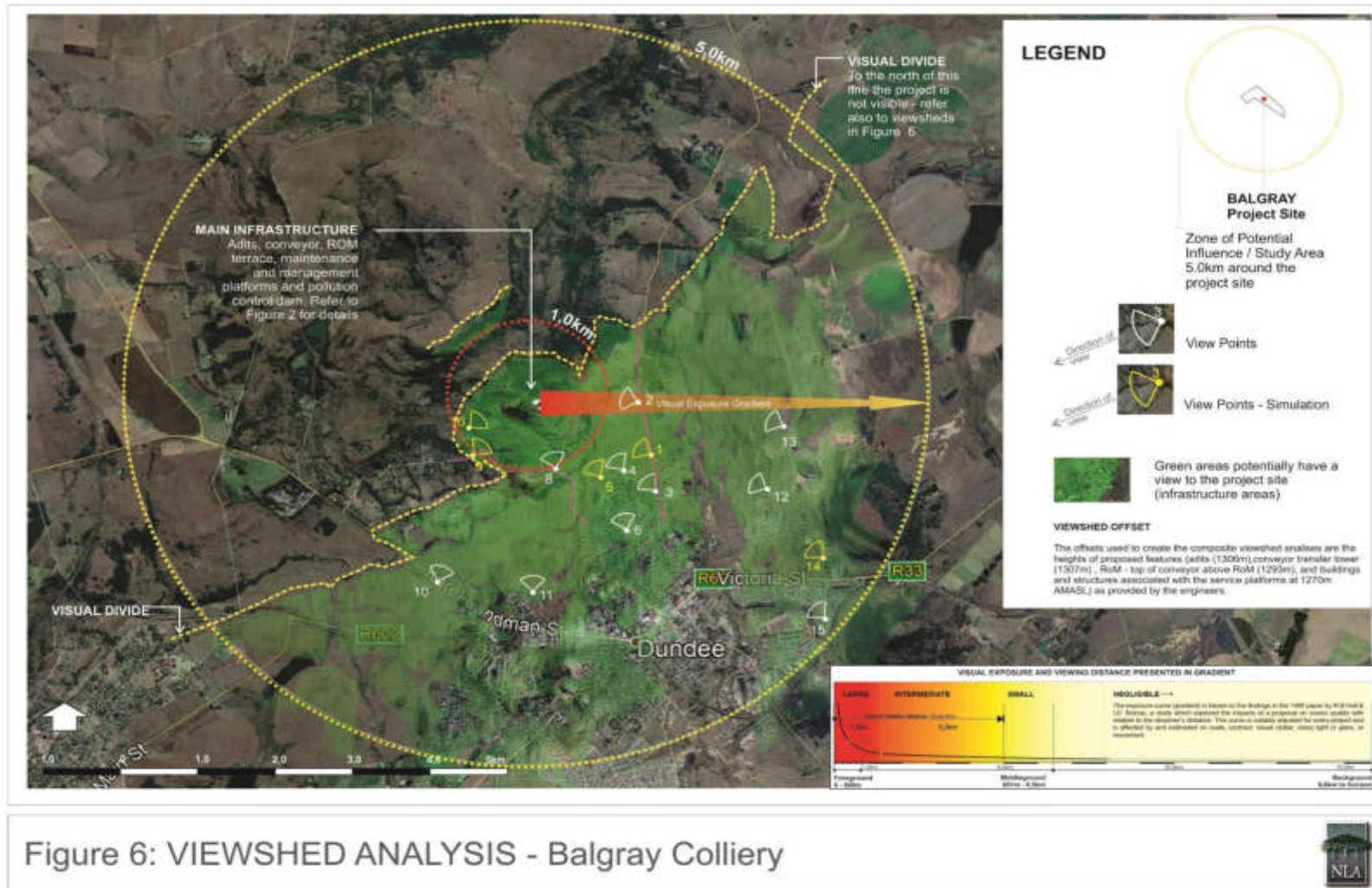


FIGURE 10-6: VIEWSHED ANALYSIS OF PROJECT

10.3.4 Blasting and vibrations

A Rock Engineering Assessment of Blasting Effect on Overburden Stability at Balgray was undertaken by Umnotho Consulting (October, 2019). The purpose of the study was to determine the peak vibrations/amplitude that will be caused by the blasting associated with the underground operations. This was done to assess whether the blasting will result in potential damage to surface structures. The calculations considered i.e. the size of the explosives to be used, the distance from blast to point of concern, and geology.

Table 10-1 below shows the results of the calculations of the study. PPV is the peak particle velocity after a particular distance from the blast. It should be taken into account that blasting will be conducted **more than 300m** below surface. **Table 10-2** contains the limits of the PPV that is needed to cause damage to a specific structure.

The results indicate that from a distance or radius of 1.0m into the rock, PPV significantly reduce and risk to values below any risk of rock damage. A distance above 10m blast vibration effects are negligible.

TABLE 10-1: BLASTING CALCULATION RESULTS

Distance (m)	PPV (COAL)	PPV Stone
0.3	6689.06	12357.04
0.6	2044.58	3777.05
0.9	1022.09	1888.15
1.2	624.95	1154.49
1.5	426.70	788.27
1.8	312.41	577.13
2.1	240.02	443.40
2.4	191.02	352.88
2.7	156.17	288.51
3	130.43	240.94
3.3	110.81	204.71
3.6	95.49	176.41
4.6	62.80	116.00
5.6	44.86	82.87
6.6	33.87	62.57
7.6	26.61	49.16
8.6	21.54	39.79
9.6	17.85	32.97
10.6	15.07	27.83
11.6	12.91	23.85

TABLE 10-2: PPV LIMITS FOR STRUCTURAL DAMAGE

Type of Structure	Type of Damage	PPV at which Damage starts (mm/s)
Rigidly mounted mercury switches	Trip-out	12.7
Concrete blocks (e.g. floor slabs)	Hairline cracks in concrete	203
Cased drill holes	Horizontal offset	381
Mechanical equipment (e.g. pumps and compressors)	Shaft misalignment	1016
Prefabricated metal buildings on concrete pads	Cracked floor, building twisted and distorted	1524

Based on blasting effect assessments conducted, it can be concluded that risk of underground blast vibration damage to the overburden rock is significantly low.

This is due to the fact that high percentage usage of explosives energy will dissipate into rock breaking and only negligible remaining energy will be propagated through rock as vibrations.

10.3.5 Biodiversity

The description of impacts on biodiversity has been sourced from work undertaken as part of the Baseline Vegetation Biodiversity Assessment and the Baseline Faunal Biodiversity Assessment (Agreenco, August 2019), see Part C – Annexures 4 and 5.

Vegetation (plants)

The vegetation assessment showed that the area has been previously substantially disturbed, exhibiting high prevalence of invasive alien plants and exotic species. It cannot be considered representative of the natural vegetation type (Gs4 - Northern KwaZulu Natal Moist Grassland) described for the area. There are, however, some pockets of natural vegetation present. No plant species of conservation concern were identified within the planned footprint of the development. Nevertheless, the risk assessment showed some impacts that could negatively affect the existing natural vegetation. This can, however, through the implementation of adequate mitigation measures be reversed and, in some instances, improved. Areas of concern have been identified with specific mitigation measure proposed.

The Balgray lease has a high density and diversity of listed Invasive Alien Plant Species. By law, the landowner or land user is required to control these plants present on the property. Invasive Plant Species proliferate in any disturbed area where the natural vegetation has been destroyed or disturbed. The planned activities at the Balgray lease will provide suitable conditions for the existing Invasive Alien Plant Species to further increase in number and colonise new areas on the lease.



FIGURE 10-7: HIGH LEVELS OF ALIEN INVASIVE PLANTS

If the proposed mitigation measures are adequately enforced, the overall impact of the mine on the indigenous vegetation diversity has the possibility to have a nett positive effect. Dedicated commitments from management to these mitigations and annual feedback to regulators will be needed.

Fauna (animals)

Potential risks pertaining to faunal biodiversity include the following:

- Avian (bird) community: The construction of the infrastructure will result in habitat loss, but to a limited extent (10.2 hectares)
- Mammal community: Disturbance due to increased human presence, increased fire risk, increased likelihood of road mortalities, and loss of habitat.
- Reptile community: The construction of the infrastructure will result in habitat loss, but to a limited extent (10.2 hectares)
- Amphibian community: Potential pollution of aquatic habitats may affect amphibian populations.

The risk assessment identified some impacts that could negatively affect the extant faunal communities as well as adjacent areas of biodiversity importance. These impacts can, however, through the implementation of adequate mitigation measures be reversed and, in some instances, improved. Areas of concern have been identified with general, and taxa-specific mitigation measures proposed.

If the proposed mitigation measures are adequately enforced, the overall impact of the mine on faunal diversity can be significantly reduced. Additionally, the possibility to have a net positive effect on faunal diversity exists. However, this will require dedication from management to the proposed mitigation measures and annual feedback to regulators.

10.3.6 Surface water resources

The description of the impacts on surface water resources has been sourced from work undertaken as part of the Freshwater Assessment (Confluent Environmental, August 2019), see Part C – Annexure 6.

Development activities typically impact on the following important drivers of aquatic ecosystems:

- Impairment of surface water quality: This refers to the contamination of water resources from mining related impacts such that the quality of water is impaired to the detriment of the aquatic ecosystem and other water users.
- Destruction and modification of aquatic habitat: This refers to the physical disturbance of in-stream and riparian aquatic habitat and associated ecosystem goods and services;
- Flow modification and erosion/sedimentation: This refers to the alteration of hydrological and geomorphological processes and drivers, and associated impacts to aquatic habitat and ecosystem goods and services;

The Sterkstroom River has clearly been largely modified, primarily due to modifications to natural hydrological and geomorphological regimes which has led to a deterioration in habitat quality that is characterised by relatively deep, slow flowing pools with a muddy substrate.

The non-perennial drainage lines running along the northern and southern extent have been moderately modified, with hydrological and geomorphological functions still largely intact.

All watercourses are located well outside scientifically determined buffer zones. The bridge crossing will be established across the Sterkstroom river at a section severely disturbed by historical activities. The remaining layout of the mine is relatively non-intrusive with respect to all watercourses and impacts are, therefore, expected to be negligible to minor, assuming the full implementation of recommended buffers and other mitigation measures. It is, therefore, anticipated that impacts associated with the proposed mine can be successfully managed so as to prevent further deterioration to aquatic watercourses.

The primary surface water impacts of the proposed project relate to the flooding of surface infrastructure and the potential pollution of downstream rivers, watercourses and drainage galleys, as a result of mixing of clean and dirty water. The assessment found that the impacts are moderate and can easily be mitigated and will be low after the implementation of the mitigation measures.

Runoff from the borrow pit areas has the potential to result in siltation of downstream river system. It is proposed to establish a berm to divert runoff away from the site. The borrow pit must not intrude the 100m buffer zone from any water courses.

No infrastructure associated with the Balgray Adit Refurbishment Project falls within the 1:100 year rainfall event floodline footprint, except a small portion of the proposed haul road and the bridge crossing.

A stormwater management system has been designed for the site in terms of GNR 704 to contain runoff from potentially contaminated areas.

10.3.7 Wetland assessment

The description of the wetland impacts has been sourced from work undertaken as part of the Wetland Assessment (Confluent Environmental, August 2019), see Part C – Annexure 7.

Three wetlands have been identified. These wetlands are relatively unaffected by hydrological and geomorphological impacts and their PES ranges from B to A. Their EIS is High.

The two seep wetlands are located on a relatively flat shelf, halfway up the Mpate Mountain. Surface mining infrastructure is located more than 500 m and downslope of these wetlands and they will therefore be unaffected by surface infrastructure. Underground mining will occur within a horizontal distance of 500 m from the wetlands, however, the geohydrological report for the project area indicates that dewatering of the

mine is unlikely to affect these wetlands given the depth of mining (>300m).

The channelled valley-bottom wetland is located at the end of the northern non-perennial drainage line just above the confluence with the Sterkstroom River. This wetland is relatively unimpacted from a hydrological and geomorphological perspective, although several species of alien invasive plants were located along its banks. This wetland is unlikely to be directly impacted by any mining activities and its proximity to the haul road is the only likely source of potential impact. The layout of the mine is relatively non-intrusive with respect to the channelled-valley-bottom wetland and impacts are, therefore, expected to be negligible to minor, assuming the full implementation of recommended buffers and other mitigation measures.

It is, therefore, anticipated that impacts associated with the proposed mine can be successfully managed so as to prevent deterioration to the wetlands.

10.3.8 Soil impacts

During the construction phase of the Balgray infrastructure, topsoil will be lost either directly through covering with infrastructure or indirectly during the stockpiling and storing. Increase volume and velocity of runoff from impermeable surfaces during the operational phase may also contribute to erosion and loss of topsoil. The storage and use of hazardous substances may cause spillages and soil pollution. Adequate stormwater management measures must be implemented to prevent soil erosion.

Temporary stockpiling of topsoil for the borrow pit must be done correctly to prevent erosion and to preserve the soil characteristics that is essential for rehabilitation purposes.

10.3.9 Groundwater impacts

The description of impacts on groundwater was sourced from work undertaken as part of the Hydrogeological Investigation (CGS, September 2019), see Part C – Annexure 8.

The identified risks for the construction phase are summarised below:

- Dewatering at excavations for construction purposes can cause localised altering of the groundwater flow and levels in the shallow aquifer at the construction site. This impact should however be localised due to the low permeability.
- Blasting at the proposed construction site could cause fracturing of the nearby geological formations that will increase permeability. The risk is moderate prior to the application of mitigation and low afterwards.

- Potential groundwater contamination caused by spillages, accidents, poor waste management and sanitation practices during construction activities by contractors.

The identified risks for the operational phase are summarised below:

- Underground mining of coal will result in groundwater ingress into the workings which needs to be pumped out for mine safety.
- Dewatering and resultant altering of the groundwater flow regime.
- Poor quality seepage from proposed PCD and temporary stockpiles into the aquifer.
- Blasting at the proposed underground workings could cause fracturing of the nearby geological formations that will increase permeability.
- Potential groundwater contamination caused by spillages, accidents, poor waste management and sanitation practices during operational activities.

The effect of aquifer drawdown as a result of dewatering at the underground mining operation is summarised below and illustrated in Figure 10-8.

- A maximum aquifer drawdown of 3 m, can be expected, with the lowest drawdown in the order of 0.1 m. It should be noted that the drawdown ZOI indicates drawdown in the aquifer layer directly above the UG workings. Hence, drawdown in regional water tables in the uppermost reaches of the mountain, is unlikely (due to mine depth).
- No groundwater users fall within the dewatering ZOI and no perennial streams fall within the dewatering ZOI due to the dewatering depth underneath the mountain area (> 300 m).
- The springs discovered in the area, namely spring F3 and spring F2, likely fall within the 0.3 m drawdown ZOI. Hence, the impact on the springs is likely to be low to insignificant. These springs are not used by receptors.
- The numerical model indicates that it will take approximately 3 to 4 years for the mine workings to flood completely, after LOM.

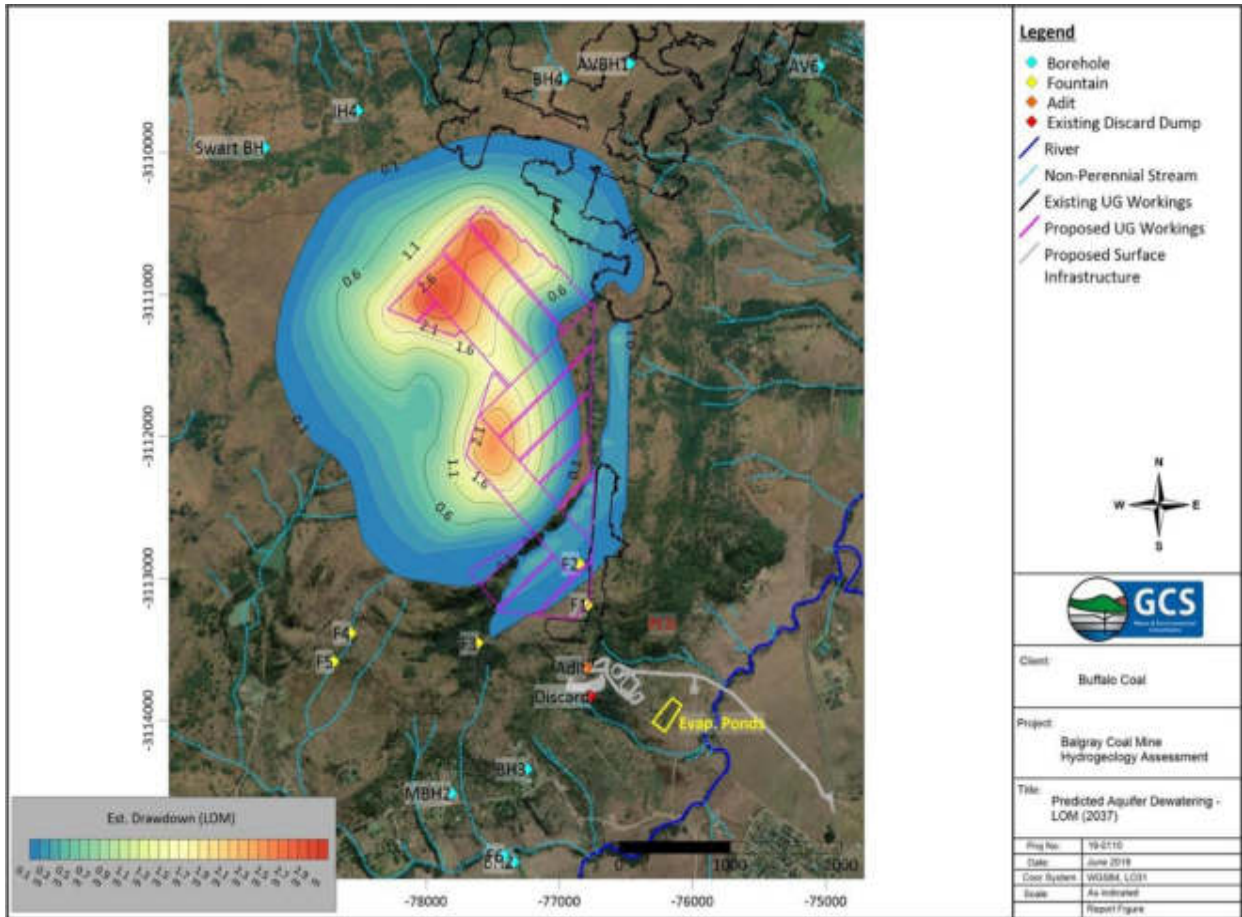


FIGURE 10-8: PREDICTED AQUIFER DRAWDOWN AT LOM

All the above mentioned risks have been rated as moderate prior to the application of mitigation measures. The application of mitigation measures will lower the risk and the significance of all the risks will be low, except for groundwater ingress into the aquifer due to underground mining activities.

A seepage wetland was found overlying the northern portions of the proposed underground works. There will likely be no impact on this surface wetland, as it appears to be fed by a different aquifer system than the one that will be dewatered.

10.3.10Hydropedology

The description of impacts on the hydropedology environment has been sourced from work undertaken as part of the Hydropedology Assessment (The Biodiversity Company, September 2019), see Part C – Annexure 12.

The findings from the hydropedological study suggest that the adits will impact recharge, which could in-turn impact on the water regimes of soils downslope. The direct impact of the adits on stream water is however likely to be small, as the downslope land segments are largely stores of water for evapotranspiration and not conduits of lateral flow. Since

the area covered by the adit is relatively small, the overall impact is likely to be small as well. This impact could be mitigated by artificially recharging groundwater collected in and around the adit. Care must however be taken to ensure that the water is not polluted, and that erosion is not induced.

The Geohydrological Assessment found that no groundwater users fall within the dewatering Zone of Influence (ZOI) and no perennial streams fall within the dewatering ZOI due to the dewatering depth underneath the mountain area (> 300 m).

The study also found that a seepage wetland was found overlying the northern portions of the proposed underground works. There will likely be no impact on this surface wetland, as it appears to be fed by a different aquifer system than the one that will be dewatered.

10.3.11 Cultural Heritage

The description of impacts on the heritage environment has been sourced from work undertaken as part of the Heritage Assessment (PGS Heritage, August 2019), see Part C – Annexure 9.

The heritage sites BALG 1 (old adits), BALG 2 (poorly preserved remains of a historic farmstead) and BALG 3 (rectangular structure which may have been a historic black homestead where the risk for the presence of unmarked stillborn graves exists) is expected to be affected by the development. BAL 1 is of low significance and the impacts will be of a low magnitude and extent. BAL 2 and 3 is classified as Generally Protected B (GP. b) or Medium Significance and may not be disturbed without the implementation of mitigation measures.

10.3.12 Socio-economic

The description of the socio-economic impact assessment has been sourced from work undertaken as part of the socio-economic impact assessment (Urban Econ, September 2019), see Part C – Annexure 10.

Unemployment in Endumeni (29%) and Dannhauser (43%) is above the national average and the situation is likely to get worse considering the continued declining mining activities in these two local areas. The proposed mining activity will create numerous positive socio-economic benefits including job creation and procurement of local goods and services and will stimulate the local economy. The stimulation of the national economy will occur as a result of the investment into the mine and proceeding increase in production. The subsequent benefits are employment creation, a rise in consumption levels, new business sales, and a contribution to GDP.

However, due to the nature of the area where the proposed mine is to be established, the development of the mine will to some degree negatively impact livestock farming activities in farms within and close to the proposed project footprint. The following impacts will have a moderate impact as assessed by the social specialist:

- The in-migration of migrant labour and job seekers will place pressure on local government to adequately provide housing, services and social facilities.
- Potential increase in theft related crimes due to increased movement of people
- Diseases, substance abuse and other social ills could increase leading to increased community dissatisfaction.
- During construction, there is likely to be increases in noise and traffic on the local roads from construction activities, and this is likely to develop into a nuisance for local residents.
- The impact will take place as a result of the change in the state of environment which may reduce the property market activity and make some of the properties less desirable/attractive for selected buyers.

The implementation of the proposed mitigation measures (controlled access, community safety forum, open communication, noise control, traffic regulation, HR to manage job expectations) will decrease the potential impact and result in a low significance. Overall, mitigating the above-mentioned impacts as well as settling issues with affected properties would make the project socio-economically justifiable.

10.3.13 Traffic

The description of impacts on traffic has been sourced from work undertaken as part of the Traffic Impact Assessment (Aurecon, August 2019), see Part C – Annexure 14.

The construction and operations associated with of the recommissioning of the colliery will generate additional volumes of traffic on the existing road network within the study area. It is estimated that approximately 7 trips per hour will be generated per hour during the construction phase and 33 trips per hour during the operational phase.

It should be noted that Balgray will be taking over from Aviemore and so the traffic will not increase along the route and in town as the production levels are the same. Only when Aviemore North begins or Magdalena starts up will there be a slight increase. But it will be significantly lower than in the past when both Magdalen and Aviemore were operating simultaneously.

The analysis of the existing road network revealed that the surrounding road network is operating at well below its capacity and at a good level of service. This Traffic Impact Assessment showed that the construction and operational phases of the proposed development will generate low volumes of traffic during both the AM and PM peak hours. The existing road network has sufficient capacity to accommodate these additional low volumes of traffic. The impact of the additional traffic on the surrounding road network is, therefore, expected to be negligible.

Similarly, whilst the construction and operational phases of the proposed development are expected to generate minimal pedestrians, the wide verges along the existing road network will be able to accommodate the additional pedestrians, if required.

The additional traffic that will be generated by the proposed colliery operations is also not expected to have any adverse impact on the existing road safety conditions.

Where the potential for conflict between additional heavy vehicles generated by the development and pedestrians exist, for example in the urban area of Dundee, the heavy vehicles will be travelling at slow speeds due to other vehicle and pedestrian activity in the town environment.

10.4 Motivation where no alternative sites were considered.

No site alternative sites were proposed for the project. The location of the mining operations was selected due to the position of the coal reserve and the local geology. The coal reserve cannot be accessed from the Aviemore (northern) side of the Impati Mountains due to a transgressive dolerite sill with a down throw of 45-50m. The site will be located at the existing old Balgray colliery which has been disturbed by previous activities. Therefore, the proposed activities will result in less disturbance compared to an alternative undisturbed site. The proposed project is optimally located in terms of the existing coal processing facility in Dundee.

10.5 Statement motivating the alternative development location within the overall site.

The areas included in the infrastructure were identified through methods listed in Section 3-7.

10.6 Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.

Please refer to Section 10.1 for the methodology used in the ranking of impacts. Please also refer to Section 10.1 for the methodology used for the application of a mitigation confidence ranking to the impact ranking.

11. ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK

The impact assessment for each phase of the proposed project is provided below for the construction phase (Table 11-1 and 11-2), operational phase (Table 11-3 and 11-4) and decommissioning and closure phase (Table 11-5 and 11-6). The assessment of the impact and recommended mitigation measures have been identified through the utilisation of the baseline environmental conditions (Section 7), summary of the impacts which stipulate the nature thereof (Section 10) and the specialist studies findings, including the impact assessment methodology provided in section 10.1 and the methodology used for the application of a mitigation confidence ranking provided in section 10.1.

Table 11-1: Construction phase impacts for the proposed refurbishment of the Balgray Adit and underground coal mining operations

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Construction activities (grading, bulldozing, drilling operation, vehicles travelling on access road and secondary roads.)	Noise	Increase noise levels due to construction activities that may cause nuisance to surrounding receptors/residents (night time)	C	5	2	3,5	3	3,25	1	3,25	Conduct construction drilling activities during the daytime. Minimize all night-time traffic and construction activities, if possible. The delivery and collection of equipment and material should not be permitted at night.	0,4	1,3
	Noise	Increase noise levels due to construction activities that may cause nuisance to surrounding receptors/residents (day time)	C	2	2	2	3	2,5	0,6	1,5	Implement a strict speed limit on site. A six-monthly noise monitoring program should be developed and implemented to ensure that the noise levels at the closest NSD are below 45 dBA. Develop a complaints management procedure and register for the site.	0,4	0,6
Excavation of material at borrow pit	Noise	Increase noise levels due to excavation activities at the borrow pit	C	4	2	3,5	3	3,25	0,8	2,4	Conduct excavation activities at the borrow pit during day time. Develop a complaints management procedure and register for the site. Establish a 50m buffer from the residential areas. Use only vehicles that are in good working order. Investigate the use of alternative reverse hooters with lower noise levels The borrow pit will only be operational during daylight hours 06:00-16:00 summer and winter 07:00-15:00	0,6	1,44
Construction activities Laydown areas. Movement of vehicles Lights.	Visual environment	Residents immediate west of the site. Alteration to the visual quality of aspects of the study area due the removal of vegetation, topsoil and earthworks to create the working platforms. The erection of structures to be located on the platforms and the development of the new adits.	C	4	2	3	3	3	1	3	Minimum amount of existing vegetation and topsoil should be removed, and natural vegetation should be retained for rehabilitation purposes. The construction camp must be positioned in an area less visible from receptors. The height and extent of the retaining wall(s) associated with the adit (portal area) must be minimised as it is the most visible from sensitive viewing areas west of the site. All existing trees that can screen operations (specifically from views west of the mine) and are not required to be removed due to infrastructure development, should be retained. The footprint of the earthworks must be minimised and only conducted in demarcated areas. All cut and fill slopes and areas affected by construction work should be progressively top soiled and re-vegetated as soon as possible; Cut and fill slopes should mimic the shapes and angles found in the adjacent area; Establish a vegetated earth berm screen (approximately 3 m	0,8	2,4

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Construction activities Laydown areas. Movement of vehicles Lights.	Visual environment	<p>All other relevant areas.</p> <p>Alteration to the visual quality of aspects of the study area due the removal of vegetation, topsoil and earthworks to create the working platforms. The erection of structures to be located on the platforms and the development of the new adits.</p>	C	3	3	3	3	3	0,6	1,8	<p>high) along the western terrace of the adit (portal) area to screen sensitive views from residences immediately west of the site.</p> <p>Where new vegetation is proposed to be introduced to the site, an ecological approach to rehabilitation, as opposed to a horticultural approach should be adopted. For example, communities of indigenous plants enhance biodiversity, a desirable outcome for the area. This approach can significantly reduce long term costs as less maintenance would be required over conventional landscaping methods as well as the introduced landscape being more sustainable.</p> <p>Progressive rehabilitation of all cut to fill embankments should be carried out immediately after they have been established.</p> <p>Paint all structures with colours that reflect and compliment the colours of the surrounding landscape. To further reduce the potential of glare, the external surfaces of structures should be articulated or textured to create interplay of light and shade. Avoid pure whites and blacks.</p> <p>Implement dust management measures stipulated in the air quality section.</p> <p>Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site i.e. lights are to be aimed away from residential areas (south and west of the site) towards the mountain.</p> <p>Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on illegal entry to the site.</p> <p>Minimise the number of light fixtures to the bare minimum, including security lighting.</p>	0,5	0,9
Borrow pit at the south of the site	Visual environment	Alteration to the visual quality of aspects of the study area due the removal of vegetation, topsoil and establishment of the borrow pit.	C	4	2	3	3	3	1	3	<p>Keep soil stockpile height as low as possible.</p> <p>Commence with the rehabilitation of the borrow pit within 6 months after material has been removed.</p> <p>Haulage of excavated material as soon as possible to prevent stockpiling.</p> <p>The footprint of the excavation activities must be minimised and only conducted in demarcated areas.</p> <p>Implement dust management measures stipulated in the air quality section.</p> <p>Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site i.e. lights are to be aimed away from residential areas</p> <p>Minimise the number of light fixtures to the bare minimum, including security lighting.</p>	0,8	2,4
Potable use Dust suppression Maintenance	Water Consumption	Groundwater abstraction from borehole	O	1	4	2,5	2	2,25	0,6	1,35	<p>Use water from PCD for dust suppression.</p> <p>Awareness training to promote water conservation. Groundwater abstraction not to exceed sustainable safe yields.</p>	0,6	0,81

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Storage and use of hazardous substances (diesel, grease, paint etc)	Surface Water Resources (wetland and aquatic environment)	Contamination of surface water resources due to contaminated run-off originating from laydown areas and areas of work.	C	4	2	3	3	3	0,6	1,8	<p>All hazardous substances must be stored in bunded areas with the capacity to contain 110% of the total storage capacity or 25% of the storage capacity where multiple tanks are stored.</p> <p>Implement a stormwater management system that complies with GNR 704 to separate clean and potentially contaminated runoff.</p> <p>Contaminated runoff must be diverted to a pollution control dam.</p> <p>All dirty water channels must be inspected and cleaned regularly to prevent blockages.</p> <p>Maintenance and refuelling of machinery and vehicles must only be conducted in the dedicated services platform area.</p> <p>Develop and implement an emergency procedure to deal with large scale spillages.</p> <p>Drip trays are to be provided where mobile equipment has the potential to drip oil.</p> <p>Spill response equipment must be readily available on site. Develop a freshwater quality monitoring programme to assess potential impacts from the mining operation.</p>	0,4	0,72
Bridge crossing Surface infrastructure	Surface Water Resources (wetland and aquatic environment)	Alteration of the Flow Regime	C	1	2	1,5	3	2,25	0,4	0,9	None proposed	1	0,9
Site clearance	Surface Water Resources (wetland and aquatic environment)	Site clearance and sedimentation of aquatic habitat.	C	4	2	3	3	3	0,8	2,4	<p>Clearance of vegetation must be limited to demarcated areas. Minimise time that soil is exposed during construction. Implement erosion control measures during construction phase, i.e. berms, sandbags. Ensure that excavations are compacted after construction has been completed. Additional measures must be implemented if increased erosion is detected. Implement stormwater containment measures during construction to capture water runoff from construction area.</p>	0,4	0,96
Establishment and operation of borrow pit during construction	Surface Water Resources (wetland and aquatic environment)	Sedimentation of downstream water resources	C	4	2	3	3	3	0,8	2,4	<p>Implement erosion control measures to prevent siltation of downstream water resources.</p> <p>Establish a berm upstream of the borrow pit to control/divert surface water runoff that may lead to erosion and siltation.</p>	0,6	1,44
Rehabilitation of borrow pit	Visual Noise Biodiversity and land capability.	<p>Improved visual appearance and reduced noise levels</p> <p>Decrease potential for sedimentation of water resources</p> <p>Potential to improve biodiversity and land capability.</p>	C	3	5	4	2	3	1	3	<p>Commence with rehabilitation of the borrow pit within 6 months after building material has been removed.</p> <p>Backfill borrow pit with material used for the establishment of the upstream erosion berms.</p> <p>Slope borrow pit area according to the natural topography and drainage of the area to prevent erosion.</p> <p>Revegetate area after sloping with indigenous plant species.</p> <p>Ensure sustainable vegetation growth after rehabilitation has been completed</p> <p>Assess area for AIP encroachment and control plants accordingly.</p>	1	3

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Bridge crossing	Surface Water Resources (aquatic environment)	Disturbance of aquatic habitat - bridge crossing	C	4	3	3,5	2	2,75	0,8	2,2	<p>The design of the bridge crossing must ensure that the creation of turbulent flow in the system is minimised, in order to prevent downstream erosion;</p> <p>No support pillars should be constructed within the active channel of the river;</p> <p>The crossing must take place at right angles to the course of the river;</p> <p>Stabilisation of river banks in the vicinity of the bridge crossing by employing one or a combination of the following individual techniques:</p> <ul style="list-style-type: none"> o Re-sloping of banks to a maximum of a 1:3 slope; o Revegetation of re-profiled slopes; o Temporary stabilisation of slopes using geotextiles; and o Installation of gabions and reno mattresses. <p>The mine must ensure that flow connectivity along the river is maintained and that the bridge crossing will not result in any barriers preventing biota (i.e. fish) moving upstream and downstream of the crossing.</p>	0,4	0,88
Construction activities	Surface Water Resources (wetland and aquatic environment)	Disturbance of aquatic habitat - soil disturbance and alien invasive plant infestation	C	3	3	3	2	2,5	0,6	1,5	<p>All water watercourses other than the immediate area of the Sterkstroom crossing are to be demarcated as no-go areas for vehicles and construction personnel.</p> <p>Develop an alien invasive plant management plan to prevent further spreading of such plants</p>	0,8	1,2
Bridge crossing	Hydrology	Flooding of planned infrastructure Only a small section of the haul road and the bridge crossing will be situated in the 1:100 year flood zone	C	3	4	3,5	3	3,25	0,7	2,275	Engineering design of bridge crossing to ensure stable structure.	1	2,275
Surface area	Hydrology	Reduction in catchment yield	C	2	4	3	3	3	0,4	1,2	None proposed	1	1,2
Vegetation clearance	Air Quality	Excessive dust generated from vegetation clearing	C	4	1	2,5	3	2,75	0,8	2,2	Removal of vegetation must be avoided until such time as it is required, and exposed surfaces must be stabilised as soon as practically possible.	0,4	0,88
Construction activities (excavating, loading, hauling, dumping, grading)	Air Quality	Excessive dust emanating from road	C	4	1	2,5	4	3,25	0,8	2,6	<p>Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants.</p> <p>Enforce strict speed limit, i.e. 30km/h.</p>	0,4	1,04
Vehicles	Air Quality	Vehicle-entrained dust generated by construction vehicles driving on unpaved roads	C	4	1	2,5	4	3,25	0,8	2,6	<p>Conduct Dust Fall Monitoring in terms of the National Dust Control Regulations in relation to all activities, including borrow pit</p> <p>Implement dust management measures stipulated in the National Dust Control Regulations.</p>	0,4	1,04
Burrow pit operations	Air Quality	Excavation activities and vehicle-entrained dust generated by vehicles driving on unpaved roads	C	3	2	2,5	4	3,25	1	3,25	Establish 50m buffer zone from the borrow pit to the residential areas	0,6	1,95
Construction	Land use and capability	Change in land use and influence on land capability	C	2	4	3	2	2,5	0,8	2	<p>Establish post mining land use</p> <p>Conduct rehabilitation according to the rehabilitation plan.</p>	0,8	1,6

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Topsoil stripping for construction of infrastructure and establishment of borrow pit	Soil	Loss of available soils due to improper handling during construction.	C	2	5	3,5	1	2,25	0,8	1,8	<p>Minimise footprint of disturbance needed for development of infrastructure and establishment of soil borrow pit</p> <p>Strip topsoil and stockpile in a dedicated area for use in rehabilitation.</p> <p>Minimise height of soil stockpiles and protect from erosion.</p> <p>Use topsoil for rehabilitation of the borrow pit</p>	0,6	1,08
Storage and handling of potential pollutants at laydown areas and areas of work.	Soil	Soil contamination	C	3	2	2,5	1	1,75	0,6	1,05	<p>All hazardous substances must be stored in bunded areas with the capacity to contain 110% of the total storage capacity or 25% of the storage capacity where multiple tanks are stored.</p> <p>Implement a stormwater management system that complies with GNR 704 to separate clean and potentially contaminated runoff.</p> <p>Contaminated runoff must be diverted to a pollution control dam.</p> <p>All dirty water channels must be inspected and cleaned regularly to prevent blockages.</p> <p>Maintenance and refuelling of machinery and vehicles must only be conducted in the dedicated services platform area.</p> <p>Develop and implement an emergency procedure to deal with large scale spillages.</p> <p>Drip trays are to be provided where mobile equipment has the potential to drip oil.</p> <p>Spill response equipment must be readily available on site.</p> <p>Develop a freshwater quality monitoring programme to assess potential impacts from the mining operation.</p>	0,6	0,63
Construction	Biodiversity (fauna and vegetation)	Loss of habitat and indigenous vegetation	C	3	2	2,5	2	2,25	1	2,25	<p>General: Limit construction activities to predetermined demarcated area.Rehabilitate and monitor any disturbed areas that do not fall within the final infrastructure footprints and improve when needed.Offset the loss of habitat by implementing an invasive alien plant eradication plan in areas not disturbed by mining and revegetate with functional indigenous species sourced from an indigenous nursery.Initiate a biodiversity monitoring programme to track the change in faunal and vegetation community composition and structure from the onset of the mining activities. If possible, time the clearing of the landscape and initiation of construction to coincide with the dry winter months as few species will be breeding or nesting during this time.</p> <p>Borrow pit: commence with rehabilitation of borrow pit within 6 months after material has been removed.</p> <p>Avian: Where possible do not remove large and/or mature trees. Before clearance of the landscape, assess if any nesting of threatened species is taking place and develop species specific mitigation plans in consultation with an avian specialist, if required at that time.</p>	0,6	1,35
Establishment of borrow pit	Biodiversity (fauna and vegetation)	Loss of habitat and indigenous vegetation	C	3	2	2,5	2	2,25	1	2,25	<p>Amphibians: Prevent spillages of hydrocarbons into the</p>	0,8	1,8

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
											drainage systems. Included habitat structure design into the rehabilitation design plans of the haul road stream crossing. Reptiles: In the days preceding onset of construction activities, the mine should consider conducting a trapping and relocation exercise with pitfall and funnel traps. Mammals: Inspect the areas for burrows or lays of larger mammals and develop species specific relocation plans if required.		
Vehicles	Biodiversity (faunal)	Faunal road mortalities	C	2	2	2	2	2	0,6	1,2	Enforce speed restrictions and minimum following distance regulations (> 50 m following distance) to allow for easy observation of fauna that might be present in the road or approaching the road.	0,2	0,24
Construction	Biodiversity (fauna and vegetation)	Degradation of CBA	C	4	2	3	3	3	1	3	Establish no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile Rehabilitate degraded areas that have a direct relationship with the CBA and corridor.	0,6	1,8
Human presence	Biodiversity (faunal)	Poaching and snaring	C	3	2	2,5	2	2,25	0,6	1,35	Prohibit harvesting/poaching of wildlife on site. Conduct awareness training.	0,4	0,54
All	Biodiversity (faunal)	Increased risk of veld fires due to underutilisation of veld and/or increased human presence on site.	C	4	2	3	3	3	0,8	2,4	Implement a fire management and prevention plan.	0,6	1,44
Disturbance	Biodiversity (vegetation)	Increase of Invasive alien plants	C	4	2	3	3	3	0,8	2,4	Implement an alien and invasive plant management and monitoring plan.	0,6	1,44
Footprint of site	Cultural Heritage	Disturbance of heritage resource (BAL2 - poorly preserved remains of a historic farmstead)	C	3	5	4	2	3	1	3	Follow correct procedure to obtain a destruction permit from SAHRA/AMAFA in terms of the HIA.	0,6	1,8
	Cultural Heritage	Disturbance of heritage resource (historic African homestead)	C	3	5	4	2	3	0,8	2,4	Establish a 50 meter buffer around the site and prevent disturbance	0,7	1,68
	Cultural Heritage	Disturbance of palaeontological deposits due to the development	C	2	5	3,5	1	2,25	0,6	1,35	Implement chance find procedure during construction. Report any findings to AMAFA KZN Heritage Agency	0,8	0,96
Dewatering	Groundwater	Lowering of water levels due to dewatering of excavations for construction.	C	4	4	4	2	3	0,8	2,4	Minimise dewatering by sealing off excavations as soon as possible. Monitor abstraction quantities/water levels.	0,8	1,92
Blasting	Groundwater	Increased fracturing and altering of flow patterns due to blasting	C	3	4	3,5	2	2,75	0,8	2,2	Grouting of intersected fractures/fissure. Monitor water levels.	0,8	1,76
Spillages, accidents, poor waste management and sanitation practices	Groundwater	Potential groundwater contamination	C	3	3	3	2	2,5	0,6	1,5	Establishment of adequate waste management practices on site.	0,8	1,2
Proposed adit	Hydropedology	Loss of Sub-Surface Flows	C	2	2	2	3	2,5	0,6	1,5	Conduct annual monitoring in the wet season of the seep wetlands to determine potential impacts of blasting on the wetland system as a result of crack formation.	1	1,5

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Surface infrastructure	Hydrogeology	Loss of Sub-Surface Flows	C	1	2	1,5	3	2,25	0,4	0,9		1	0,9
Proposed underground mine	Hydrogeology	Loss of Sub-Surface Flows	C	3	3	3	3	3	0,8	2,4		0,6	1,44
Vehicles travelling on public roads	Traffic impacts	Impact on the Existing Traffic Conditions	C	1	2	1,5	3	2,25	0,6	1,35	None proposed	1	1,35
	Traffic impacts	Impact on Existing Pedestrians and Cyclists - conflict	C	1	2	1,5	3	2,25	0,4	0,9	None proposed	1	0,9
	Traffic impacts	Impact on Road Safety	C	1	2	1,5	3	2,25	0,4	0,9	Upgrade of intersection at the access road and the P272 provincial road.	1	0,9
	Traffic impacts	Impact on the road condition	C	2	2	2	3	2,5	0,6	1,5	None proposed	1	1,5

TABLE 11-2: CONSTRUCTION PHASE IMPACTS (SOCIO-ECONOMIC) FOR THE PROPOSED REFURBISHMENT OF THE BALGRAY ADIT AND UNDERGROUND COAL MINING OPERATIONS

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Local spending	Socio-economic	Stimulation of the local economy through increase in production and GDP-R	C	3	2	2,5	3	2,75	0,8	2,2	Procure goods and services, as far as practically possible, from the local municipality	1	2,2
Employment opportunities	Socio-economic	Temporary creation of employment	C	3	2	2,5	3	2,75	0,8	2,2	Advise on the set-up of a skills desk and where it will be situated. Offer training to increase employability	1	2,2
Employment opportunities	Socio-economic	Skills development and enhancement	C	3	3	3	3	3	0,8	2,4	Devise and implement skills training and skills transfer	1	2,4
Employment opportunities	Socio-economic	Household income attainment due to employment opportunities	C	3	2	2,5	3	2,75	0,8	2,2	Hire majority of local residents who will boost local economy through expenditure that empowers local businesses and economy	1	2,2
Taxes paid	Socio-economic	Increased government revenue due to rates and taxes	C	3	2	2,5	3	2,75	0,8	2,2	None proposed	1	2,2
Influx of people	Socio-economic	Increased demand for housing, services and social facilities due to influx of migrant labour and job seekers	C	3	2	2,5	3	2,75	0,6	1,65	Manage recruitment process to control expectations and unnecessary in-migration.	0,6	0,99
Influx of people	Socio-economic	Potential increase in theft related crimes due to increased movement of people	C	2	2	3	3	3	0,6	1,8	Implement controlled access to project site and monitor activity in immediate surrounding sites. Set up local community safety forum.	0,4	0,72
Influx of people	Socio-economic	Increased social ills such as substance abuse and the spread of communicable diseases	C	2	2	3	3	3	0,6	1,8	Implement controlled access to project site. Set up local community safety forum. Maintain contact with major community stakeholders.	0,4	0,72
Mining footprint	Socio-economic	Impact on agricultural activities on the directly affected farms	C	3	2	2,5	3	2,75	0,8	2,2	Rehabilitation of site to appropriate end land use	0,6	1,32
Noise related activities and traffic	Socio-economic	Deterioration of quality of live due to noise and increase in traffic flow	C	4	3	3,5	2	2,75	0,8	2,2	The construction activities and movement of construction vehicles into the project area should be restricted to certain hours of the day. Movement of construction vehicles into the project area should be controlled and restricted to certain hours of the day.	0,7	1,54
Presence of mine	Socio-economic	Potential negative impact on property values	C	4	3	3,5	2	2,75	0,8	2,2	Mitigation measures proposed by visual and noise specialists should be strictly adhered to, in order to minimise the probability and intensity of the visual exposure in the area. Where possible, conduct independent appraisals and valuations of affected properties and consider buying these out Where possible, invest in social amenities for the surrounding neighbourhood Educate and inform the affected parties on the potential environmental impacts that could ensue and the activities to adequately manage perceptions regarding potential effects of the project on the surrounding land uses	0,7	1,54

Table 11-3: Operational phase impacts for the proposed overflow dam at the refurbishment of the Balgray Adit and underground coal mining operations

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Operational activities (general mine activities, ventilation fan, vehicles and machinery)	Noise	Increase noise levels due to operational activities that may cause nuisance to surrounding receptors/residents (day time)	Operational	2	4	3	3	3	0,8	2,4	<p>Orientate the ventilation fan optimally, not pointing towards any sensitive receptors.</p> <p>If possible, create a berm or barrier between the ventilation shaft and sensitive receptors.</p> <p>The mine can design and implement attenuators within the ventilation fan system to reduce the sound power emission levels of the fan to ensure that noise levels at the closest NSD are less than 45 dBA at night.</p>	0,6	1,44
	Noise	Increase noise levels due to operational activities that may cause nuisance to surrounding receptors/residents (night time)	Operational	5	4	4,5	3	3,75	1	3,75	<p>Enforce a strict speed limit on site.</p> <p>A six-monthly noise monitoring program should be developed and implemented to ensure that the noise levels at the closest NSD are below 45 dBA.</p> <p>Implement effective traffic management to minimise reversing.</p> <p>Develop a complaints management procedure and register for the site.</p>	0,4	1,5
Dust generation. Infrastructure. Lights Movement	Visual environment	Residents immediate west of the site. Alteration to the visual quality of aspects of the study area due the presence of structures and the movement and haulage of materials on and off the site. The result is an impact on the visual aesthetics and sense of place of the study area from a sensitive viewing area west of the site.	C	4	4	4	3	3,5	1	3,25	<p>Implement dust management measures stipulated in the air quality section.</p> <p>Maintain complaints handling procedure.</p> <p>No trees should be removed that will cause increase visual exposure of the infrastructure on site.</p> <p>Ensure that vegetation that was planted as a visual shield is maintained to ensure optimum growth.</p>	0,6	2,1
	Visual environment	All other relevant areas. Alteration to the visual quality of aspects of the study area due the presence of structures and the movement and haulage of materials on and off the site.	C	3	4	3,5	3	3,25	0,8	2,6	<p>Ensure that all lights are directed downwards away from receptors. However, safety of workers must be considered.</p>	0,5	1,3
Underground blasting activities	Blasting and vibrations	Result in vibrations and potential damage to surface structures.	Operational	2	4	3	3	3	0,4	1,2	<p>Strictly follow the requirements of the blasting procedure (Annexure 17)</p> <p>Only qualified employees may conduct blasting.</p> <p>Implement a complaints management procedure.</p>	0,4	0,48

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Storage and use of hazardous substances (diesel, grease, paint etc)	Surface Water Resources (wetland and aquatic environment)	Contamination of surface water resources due to contaminated run-off originating from services platform, adit.	Operational	4	4	4	3	3,5	0,6	2,1	<p>All hazardous substances must be stored in bunded areas with the capacity to contain 110% of the total storage capacity or 25% of the storage capacity where multiple tanks are stored.</p> <p>Implement a stormwater management plan that complies with GNR 704 to separate clean and potentially contaminated runoff.</p> <p>Implement a maintenance plan to ensure that Contaminated runoff must be diverted to a pollution control dam.</p> <p>All dirty water channels must be inspected and cleaned regularly to prevent blockages.</p> <p>Maintenance and refuelling of machinery and vehicles must only be conducted in the dedicated services platform area.</p> <p>Develop and implement an emergency procedure to deal with large scale spillages.</p> <p>Drip trays are to be provided where mobile equipment has the potential to drip oil.</p> <p>Spill response equipment must be readily available on site.</p> <p>Develop a freshwater quality monitoring programme to assess potential impacts from the mining operation.</p>	0,4	0,84
ROM stockpile	Surface Water Resources (wetland and aquatic environment)	Contamination of surface water resources due to contaminated run-off from ROM stockpile	Operational	4	4	4	3	3,5	0,6	2,1	Runoff from the ROM stockpile must be diverted to a Pollution Control Dam	0,4	0,84
Coal dust	Surface Water Resources (wetland and aquatic environment)	Contamination of surface water resources as a result of coal dust deposition on haul roads and other areas.	Operational	4	4	4	3	3,5	0,4	1,4	Implement measures stipulated in the air quality section to reduce dust.	0,4	0,56
Activities on site	Surface Water Resources (wetland and aquatic environment)	Alteration of the Flow Regime	Operational	1	2	1,5	3	2,25	0,4	0,9	None proposed	1	0,9
Impermeable surfaces	Surface Water Resources (wetland and aquatic environment)	Increased runoff velocity as a result of the establishment of impermeable surfaces - sedimentation	Operational	6	4	5	3	4	0,6	2,4	<p>Roads should be maintained regularly to ensure that surface water drains freely off the road preventing erosion.</p> <p>Run-off generated from impervious areas must be controlled using erosion control and sediment trapping measures.</p> <p>These control measures must be established at regular intervals perpendicular to the slope to break surface flow energy and reduce erosion as well as trap sediment.</p> <p>Additional measures must be implemented if increased erosion is detected.</p>	0,4	0,96
Bridge crossing	Surface Water Resources (wetland and aquatic environment)	Disturbance of aquatic habitat - routine maintenance	Operational	3	4	3,5	2	2,75	0,8	2,2	During the operational phase of the development, all watercourses other than the immediate areas of crossing are to be demarcated as no-go areas for vehicles and personnel.	0,8	1,76

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
	aquatic environment)	activities Bridge crossing - reduced connectivity									Any areas where active erosion occurs as a result of the mining operations must be rehabilitated appropriately.		
Systematic removal of the seam reserve by underground mining methods	Groundwater	Groundwater ingress due to underground mining of coal	Operational	4	4	4	2	3	0,8	2,4	No mitigation proposed	1	2,4
Dewatering	Groundwater	Lowering of the water table	Operational	3	4	3,5	3	3,25	0,8	2,6	Minimize dewatering (if possible) during dry seasons.	0,6	1,56,
Existing PCD, discard dumps, dirty water trench and evaporation pond into the aquifer	Groundwater	Poor quality seepage	Operational	4	4	4	2	3	0,8	2,4	No mitigation proposed Should impacts on boreholes and springs occur an alternative water supply should be provided to the farmers that rely on that water. Water levels of hydro census boreholes within the predicted zone of impact should be monitored frequently to assess effects of dewatering over time.	1	2,4
Proposed PCDs and temporary stockpiles into the aquifer	Groundwater	Poor quality seepage	Operational	4	4	4	2	3	0,8	2,4	Lining of PCD.	0,6	1,44
Blasting	Groundwater	Increased fracturing and altering of flow patterns due to blasting	Operational	4	4	4	3	3,5	0,8	2,8	Follow blasting procedure.	0,6	1,68
Spillages, accidents, poor waste management and sanitation practices	Groundwater	Potential groundwater contamination	Operational	3	4	3,5	2	2,75	0,8	2,2	Implement good housekeeping practices Implement adequate waste management practices	0,8	1,76
Groundwater abstraction	Groundwater	Dewatering the local aquifer to supply the mine with operational water	Operational	3	4	3,5	3	3,25	0,8	2,6	Abstraction should not exceed the sustainable yield of the local aquifer as determined by the geohydrological specialist study	0,4	1,04
Proposed adit	Hydropedology	Loss of Sub-Surface Flows	C	2	4	3	3	3	0,6	1,8	Annual monitoring of the seeps situated in the mountain must be undertaken to determine the potential threats blasting poses towards these seeps. Fixed position photography must be part of these monitoring programmes and must be undertaken in January, to accommodate the wet season. In the event of loss of functionality and a decrease in vegetation (which could be the result of a loss of moisture), a geotechnical assessment must be conducted to investigate the possibility of underground mining activities being the cause of this phenomenon; It is recommended that water accumulating in the adits and underground mining areas be recharged back into the groundwater reserves with special care taken in regard to contamination (i.e. Acid Mine Drainage (AMD)).	1	1,8
Surface infrastructure	Hydropedology	Loss of Sub-Surface Flows	C	1	4	2,5	3	2,75	0,4	1,1		0,4	0,44
Proposed underground mine	Hydropedology	Loss of Sub-Surface Flows	C	4	4	4	3	3,5	0,8	2,8		0,6	1,68
ROM stockpile	Air Quality	Dust generation – air quality and nuisance conditions	Operational	2	4	3	3	3	0,4	1,2	An irrigation system at the material loading areas can be installed to prevent dust liberation from the operations. Prevent spillage from the conveyor belt by regulating	0,4	0,48

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Loading material from the ROM stockpile onto the trucks using a front-end loader that could impact the environment and human health	Air Quality		Operational	4	4	4	4	4	0,8	3,2	<p>the amount of material and feeding the material to the centre of the belt. The belt should be covered by skirting to prevent wind entrained dust.</p> <p>Coal spillages must be cleaned appropriately.</p> <p>Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants</p> <p>Enforce strict speed limit, i.e. 30km/h.</p> <p>Trucks should be covered to avoid wind blowing the material away and spillage on the road surface.</p>	0,4	1,28
Conveyor belt (transferring and throw over point)	Air Quality		Operational	3	4	3,5	4	3,75	1	3,75		0,4	1,5
Vehicles	Air Quality		Operational	4	4	4	4	4	0,8	3,2		0,4	1,28
Wind erosion on the material during transportation	Air Quality		Operational	2	4	3	3	3	0,8	2,4		0,4	0,96
Increase runoff	Soils	Loss of available soils due to erosion	Operational	4	4	4	2	3	0,8	2,4	<p>Minimise footprint of disturbance to that needed for development of infrastructure.</p> <p>Strip available topsoil for use in rehabilitation.</p> <p>Protect stockpiles from erosion.</p> <p>Prevent encroachment of invasive plant species on soil stockpiles</p>	0,6	1,44
Disturbance	Biodiversity (fauna and vegetation)	Loss of habitat	Operational	2	4	3	1	2	0,6	1,2	<p>Maintain no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile.</p> <p>The footprint should not be expanded outside the site plan. Continue with annual monitoring of faunal diversity to be able to track the change in faunal diversity during the life of mine and implement specific mitigation measures if the data shows that it is required.</p> <p>Identify and establish areas on the lease where no new disturbances will be allowed and manage those areas to maintain ecological functionality</p> <p>Ensure that erosion control measures are in place to prevent the shallow aquatic habitats from silting up.</p> <p>Monitor the in-stream rehabilitation success at the haul road stream crossing and manage when needed.</p>	0,6	0,72
Disturbance	Biodiversity (vegetation)	Alien Invasive Plant Species	Operational	3	4	3,5	2	2,75	0,8	2,2	Continue with the implementation of the alien and invasive plant eradication plan and monitor the success thereof.	0,2	0,44
Food Buildings	Biodiversity (faunal)	Pest species habitat creation	Operational	3	4	3,5	2	2,75	0,8	2,2	<p>Design buildings with bird deterrent measures to deter pest species from nesting on/in the buildings.</p> <p>Implement adequate waste management practices to prevent rodent infestation.</p> <p>Due to the presence of Vervet monkeys on the lease, it will likely be required to fit rubbish bins with primate</p>	0,2	0,44

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
											deterrent features to avoid primates from accessing the bins and becoming a nuisance.		
Vehicles travelling	Biodiversity (faunal)	Faunal road mortalities	Operational	2	4	3	2	2,5	0,6	1,5	Enforce speed restrictions and minimum following distance regulations (> 50 m following distance) to allow for easy observation of fauna that might be present in the road or approaching the road.	0,2	0,3
Disturbance	Biodiversity (fauna and vegetation)	Degradation of CBA	Operational	4	4	4	3	3,5	0,6	2,1	Maintain no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile. The footprint should not be expanded outside the site plan.	0,6	1,26
Human presence	Biodiversity (faunal)	Poaching and snaring	Operational	3	4	3,5	2	2,75	0,6	1,65	Prohibit harvesting/poaching of wildlife on site. Conduct awareness training.	0,4	0,66
Human presence	Biodiversity (faunal)	Increased risk of veld fires due to underutilisation of veld and/or increased human presence on site.	Operational	4	4	4	3	3,5	0,6	2,1	Implement a fire management and prevention plan.	0,6	1,26
Increased electricity consumption resulting from HME maintenance area.	Climate Change	Increased electricity consumption	Operational	1	4	2,5	5	3,75	0,2	0,75	Investigate energy efficient appliances.	1	0,75
Vehicles travelling on public roads	Traffic impacts	Impact on the Existing Traffic Conditions	Operational	1	4	2,5	3	2,75	0,6	1,65	None proposed	1	1,65
	Traffic impacts	Impact on Existing Pedestrians and Cyclists - conflict	Operational	1	4	2,5	3	2,75	0,4	1,1	None proposed	1	1,1
	Traffic impacts	Impact on Road Safety	Operational	1	4	2,5	3	2,75	0,4	1,1	None proposed	1	1,1
	Traffic impacts	Impact on the Condition of the Surrounding Road Network	Operational	2	4	3	3	3	0,6	1,8	None proposed	1	1,8

TABLE 11-4: OPERATIONAL PHASE IMPACTS (SOCIO-ECONOMIC) FOR THE PROPOSED REFURBISHMENT OF THE BALGRAY ADIT AND UNDERGROUND COAL MINING OPERATIONS

IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Socio-economic	Increase in production and GDP-R due to operation expenditure	Operational	3	4	3,5	3	3,25	0,8	2,6	Maximise benefit for local economy through local procurement	1	2,6
Socio-economic	Employment creation due to operation and maintenance activities	Operational	3	4	3,5	3	3,25	0,8	2,6	Offer skills development programme to serve mining market in the region and create local employability	1	2,6
Socio-economic	Skills development and enhancement	Operational	3	4	3,5	3	3,25	0,8	2,6	Skills levels in municipality and for benefitting individuals will improve due to employment created.	1	2,6
Socio-economic	Employment in operations and maintenance of the colliery will result in household income earnings for benefitting households	Operational	3	4	3,5	3	3,25	0,8	2,6	Employing locally will increase benefit to local households and inadvertently the local economy.	1	2,6
Socio-economic	Increased government revenue due to rates and taxes	Operational	3	4	3,5	3	3,25	0,8	2,6	None proposed	1	2,6
Socio-economic	Increased pressure on service infrastructure	Operational	1	4	2,5	3	2,75	0,4	1,1	Where possible, invest in own energy generation capabilities	0,6	0,66

TABLE 11-5: DECOMMISSIONING PHASE IMPACTS FOR THE PROPOSED REFURBISHMENT OF THE BALGRAY ADIT AND UNDERGROUND COAL MINING OPERATIONS

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Decommissioning activities	Visual Environment	Visual intrusion of the site during decommissioning	Closure	3	3	3	4	3,5	0,4	1,4	Removal of all structures. Rehabilitation of the site.	0,4	0,56
Rehabilitation	Visual Environment	Improvement of visual appearance due to rehabilitation of the site	Closure	3	3	3	4	3,5	0,4	1,4	Removal of all structures. Rehabilitation of the site.	1	1,4
Vehicles travelling on unpaved roads	Air Quality	Vehicle-entrained dust generated by mining trucks that could impact the environment and human health	Closure	4	4	4	4	4	0,8	3,2	Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants Vehicles must not exceed 30 km/h Limit access to construction site to construction vehicles only	0,4	1,28
Decant of contaminated mine water	Surface Water Resources	Contamination	Closure	4	4	4	2	3	0,4	1,2	Implement measures stipulated in the air quality section to reduce dust. Remove potential sources of pollution such as hydrocarbon-contaminated soils and dispose of at an authorised disposal facility	0,4	0,48
	Surface Water Resources	Alteration of the Flow Regime	Closure	1	2	1,5	3	2,25	0,4	0,9	Implement stormwater management system.	0,4	0,36
Erosion	Surface Water Resources	Sedimentation and siltation of river and wetlands	Closure	2	4	3	2	2,5	0,4	1	Ensure that vegetation establishment on the rehabilitated area occurs as soon as possible to prevent runoff high in sediment content. Leaving the storm water management structures in place during the decommissioning and post closure phase until the rehabilitation process is completed. Storm water management structures should be inspected after large storm events to ensure that there are no blockages or breaches. Soils compacted by heavy machinery can be ripped to allow infiltration	0,4	0,4
Oxidation of minerals	Groundwater	Groundwater contaminant plume generated by the underground workings	Closure	3	5	4	3	3,5	1	3,5	The underground workings must be allowed to flood to prevent oxidation of minerals. Implement measures stipulated in the EMP related to AMD.	0,4	1,4
Contaminated decant might flow into neighbouring streams or seep back into the aquifer.	Groundwater	Contaminated decant might flow into neighbouring streams or seep back into the aquifer.	Closure	3	4	3,5	3	3,25	0,8	2,6	Follow procedure stipulated in Section 6.2 of the EMP for measures that must be implemented for the management of potential decant.	0,4	1,04
	Groundwater	Recovery of groundwater levels after cessation of mining.	Closure	3	5	4	3	3,5	1	3,5	No mitigation required	1	3,5
Decommissioning activities	Noise	Increase in noise levels due to decommissioning activities	Closure	2	4	3	2	2,5	0,6	1,5	Conduct activities during the daytime. Maintain complaints register.	0,6	0,9
Additional disturbance	Biodiversity (faunal)	Loss of habitat	Closure	2	2	2	1	1,5	0,6	0,9	Limit new disturbance. Rehabilitate all disturbed areas to a point similar to the natural habitats of the area. Continue with faunal monitoring and monitoring success of rehabilitation.	0,6	0,54

ACTIVITIES	IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
											Demolition of the haul road stream crossing should be conducted during the dry winter months to avoid disturbing breeding attempts of amphibians at this site.		
Vehicles travelling	Biodiversity (faunal)	Faunal road mortalities	Closure	2	4	3	2	2,5	0,4	1	Enforce speed restrictions and minimum following distance regulations (> 50 m following distance) to allow for easy observation of fauna that might be present in the road or approaching the road.	0,2	0,2
	Biodiversity (faunal)	Degradation of CBA	Closure	2	2	2	2	2	0,6	1,2	Maintain no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile Rehabilitate degraded areas that have a direct relationship with the CBA and corridor.	0,6	0,72
Disturbance	Biodiversity (vegetation)	Alien Invasive Plant Species	Closure	4	4	4	3	3,5	1	3,5	Continue with the implementation of the alien and invasive plant eradication plan and monitor the success thereof.	0,4	1,4
Human presence	Biodiversity (faunal)	Poaching and snaring	Closure	2	2	2	2	2	0,4	0,8	Prohibit harvesting/poaching of wildlife on site. Conduct awareness training.	0,4	0,32
Decommissioning activities	Biodiversity (fauna and vegetation)	Increased risk of veld fires due to underutilisation of veld and/or increased human presence on site.	Closure	4	4	4	3	3,5	0,4	1,4	Implement a fire management and prevention plan.	0,6	0,84
Rehabilitation	Biodiversity (fauna and vegetation)	Rehabilitation of the site	Closure	4	5	4,5	3	3,75	1	3,75	Implement rehabilitation plan	1	3,75

TABLE 11-6: DECOMMISSIONING PHASE IMPACTS (SOCIO-ECONOMIC) FOR THE PROPOSED REFURBISHMENT OF THE BALGRAY ADIT AND UNDERGROUND COAL MINING OPERATIONS

IMPACT CATEGORY	POTENTIAL IMPACT	PHASE	INTENSITY	DURATION	CONSEQUENCE	EXTENT	SEVERITY	PROBABILITY	SIGNIFICANCE WITHOUT MITIGATION	MITIGATION	MITIGATION CONFIDENCE	SIGNIFICANCE WITH MITIGATION
Socio-economic	The cost of decommissioning the colliery will stimulate economic activity.	Closure	3	2	2,5	3	2,75	0,8	2,2	Employing and procuring services and goods locally will increase benefit to the local economy during decommissioning	1	2,2
Socio-economic	Loss of employment after closure	Closure	3	2	2,5	3	2,75	0,8	2,2	Engage with employees before closure Generate solution for loss of employment Implement social and labour plan.	1	2,2

12. SUMMARY OF SPECIALIST REPORTS.

The Table below contains a summary of the recommendations made by the specialist studies

TABLE 12-1: SUMMARY OF SPECIALIST RECOMMENDATIONS

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
Air Quality Impact Assessment (Agreenco)	<p>Construction</p> <ul style="list-style-type: none"> • Removal of vegetation must be avoided until such time as it is required and exposed surfaces must be stabilised as soon as practically possible. • Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants • Constructing the road close to the access gate should be avoided in high wind speed conditions or when a visible dust plume is present. • Vehicles must not exceed 30 km/h • Limit access to construction site to construction vehicles only <p>Operations</p> <ul style="list-style-type: none"> • Irrigation systems on the material loading areas can be installed to prevent dust liberation from the operations. • Prevent spillage from the conveyor belt by managing the amount of material and feeding the material to the centre of the belt. The belt should be covered by skirting to prevent wind entrained dust. • Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants • Vehicles must not exceed 30 km/h • Trucks should be covered to avoid wind blowing the material away and spillage on the road surface. Operation procedures can be put in place to prevent overloading. <p>Closure</p> <ul style="list-style-type: none"> • Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants • Vehicles must not exceed 30 km/h 	<p>Construction</p> <ul style="list-style-type: none"> • Removal of vegetation must be avoided until such time as it is required and exposed surfaces must be stabilised as soon as practically possible. • Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants. • Constructing the road close to the access gate should be avoided in high wind speed conditions or when a visible dust plume is present. • Enforce strict speed limit, i.e. 30km/h. • Conduct Dust Fall Monitoring in terms of the National Dust Control Regulations and management of the site according to the measures prescribed in the NDCR 2019. <p>Operations</p> <ul style="list-style-type: none"> • An irrigation system at the material loading areas can be installed to prevent dust liberation from the operations. • Prevent spillage from the conveyor belt by regulating the amount of material and feeding the material to the centre of the belt. The belt should be covered by skirting to prevent wind entrained dust. • Coal spillages must be cleaned appropriately. • Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants • Enforce strict speed limit, i.e. 30km/h. • Trucks should be covered to avoid wind blowing the material away and spillage on the road surface.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
	<ul style="list-style-type: none"> • Limit access to construction site to construction vehicles only 	<p>Closure</p> <ul style="list-style-type: none"> • Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants • Vehicles must not exceed 30 km/h
<p>Noise Impact Assessment (EAR Enviro Acoustic Research)</p>	<ul style="list-style-type: none"> • The main source of noise during the construction phase would be from the drilling activities associated with the ventilation shaft. While this may be highly temporary (until the shaft is a few meters deep when the walls will start to limit the propagation of noise), mitigation measures are required as it will be generating noises at night that some receptors will consider disturbing. Mitigation measures can include: <ul style="list-style-type: none"> o Where possible, the mine should limit night-time activities (22:00 – 06:00) that generate noises with an impulsive component (such as drilling or hammering); o The mine may permit drilling activities during the day-time period (06:00 – 22:00); o The drilling activities could be planned to occur during the summer period, when higher air temperatures and a more unstable atmosphere may limit the propagation of noises ; o The mine can use temporary sound barriers to limit the propagation of noises in certain directions. This could be the use of temporary offices or the development of an earth berm between the noise generating activity and the closest NSD; o The mine must plan to orientate the ventilation fan optimally, not pointing towards any NSD (the noise model orientated the ventilation fan 40o west of north for the mitigated scenario); o The mine can design and implement attenuators within the ventilation fan system to reduce the sound power emission levels of the fan to ensure that noise levels at the closest NSD are less than 45 dBA at night); o Where possible, the mine can limit operational activities during the night-time period. • All employees and contractors should receive Health and Safety induction that includes an environmental awareness component (noise). This is to allow employees and contractors to realize the potential noise risks that activities (especially night-time activities) pose to the surrounding environment; 	<ul style="list-style-type: none"> • Conduct construction drilling activities during the daytime. • Orientate the ventilation fan optimally, not pointing towards any sensitive receptors. • If possible, create a berm or barrier between the ventilation shaft and sensitive receptors. • The mine can design and implement attenuators within the ventilation fan system to reduce the sound power emission levels of the fan to ensure that noise levels at the closest NSD are less than 45 dBA at night. • Minimize all night-time traffic and mining activities, as far as possible. • Implement a strict speed limit on site. • The operation should investigate the use of white-noise alarms instead of tonal reverse alarms on heavy vehicles. • A six-monthly noise monitoring program should be developed and implemented to ensure that the noise levels at the closest NSD are below 45 dBA. • Develop a complaints management procedure and register for the site. • Provide appropriate PPE to employees. • The operation should investigate the use of white-noise alarms instead of tonal reverse alarms on heavy vehicles operating on roads, within the mining area and at stockpile areas <p>Included as mitigation in Table 9-5. Part B – Section 5 Part B – Section 7.2</p>

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
	<ul style="list-style-type: none"> • If available, topsoil and mining residue (rock) can be used to develop a noise berm between the major noise sources (ventilation shaft) and the closest NSD. This berm should ideally only be constructed during the daytime period; • Minimize all night-time (between 22:00 and 06:00) mining traffic travelling past NSD in the town of Dundee. The delivery and collection of equipment and material should not be permitted at night. Mine vehicles travelling in the town should reduce speed to less than 60 km/h; • A six-monthly noise monitoring program should be developed and implemented to ensure that the noise levels at the closest NSD are below 45 dBA. If noise levels due to the mining operation is less than 42 dBA, the noise monitoring could stop (recommendation from noise specialist) unless complaints regarding noise are registered; • The operation should investigate the use of white-noise alarms instead of tonal reverse alarms on heavy vehicles operating on roads, within the mining area and at stockpile areas¹². The advantages of white noise alarms above tonal alarms are: <ul style="list-style-type: none"> ○ It is as safe as a tonal alarm³. ○ Highly audible close to the alarm (or reversing truck)⁴. ○ It generates a more uniform sound field behind a reversing vehicle⁵. ○ Greater directional information, workers can locate the source faster. ○ Significantly less environmental noise and it creates significantly less annoyance for this noise further than 200 m (effectively inaudible further than 1,000 m). ○ When properly installed, white noise alarms of a similar sound power emission level are more likely to comply with the ISO 9533 standard. 	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
<p>Visual impact assessment (Newtown Landscape Architects)</p>	<ul style="list-style-type: none"> • With the preparation of the portions of land onto which activities will take place the minimum amount of existing vegetation and topsoil should be removed. • Ensure, wherever possible, natural indigenous vegetation is retained and incorporated into the site rehabilitation. • All top-soil that occurs within the proposed footprint of an activity must be removed and stockpiled for later use. The construction contract must include the stripping and stockpiling of topsoil. Topsoil would be used later during the rehabilitation phase. The presence of degraded areas and disused construction roads, which are not rehabilitated, will increase the overall visual impact; • Specifications with regards to the placement of construction camps (if required), as well as a site plan of the construction camp, indicating waste areas, storage areas and placement of ablution facilities should be included in the EMP. These areas should either be screened or positioned in areas where they would be less visible from human settlements and main roads; • Construction activities should be limited to between 08:00 and 17:00 or in conjunction with the ECO. • Adopt responsible construction practices aimed at containing the construction/establishment activities to specifically demarcated areas. • Building or waste material discarded should be undertaken at an authorised location, which should not be within any sensitive areas. • Reduce the height and extent of the retaining wall(s) associated with the adit (portal area) as it is the most visible from sensitive viewing areas west of the site. • All existing trees that can screen operations (specifically from views west of the mine) and are not required to be removed due to infrastructure development, should be retained. <p>Earthworks</p> <ul style="list-style-type: none"> • Earthworks should be executed in such a way that only the footprint and a small 'construction buffer zone' around the proposed activities is exposed. In all other areas, the natural occurring vegetation, should be retained, especially along the periphery of the sites. • All cut and fill slopes and areas affected by construction work should be progressively top soiled and re-vegetated as soon as possible; • Cut and fill slopes should mimic the shapes and angles found in the adjacent area; 	<ul style="list-style-type: none"> • Minimum amount of existing vegetation and topsoil should be removed, and natural vegetation should be retained for rehabilitation purposes. • The construction camp must be positioned in an area less visible from receptors. • The height and extent of the retaining wall(s) associated with the adit (portal area) must be minimised as it is the most visible from sensitive viewing areas west of the site. • All existing trees that can screen operations (specifically from views west of the mine) and are not required to be removed due to infrastructure development, should be retained. • The footprint of the earthworks must be minimised and only conducted in demarcated areas. • All cut and fill slopes and areas affected by construction work should be progressively top soiled and re-vegetated as soon as possible; • Cut and fill slopes should mimic the shapes and angles found in the adjacent area; • Establish a vegetated earth berm screen (approximately 3 m high) along the western terrace of the adit (portal) area to screen sensitive views from residences immediately west of the site. • Where new vegetation is proposed to be introduced to the site, an ecological approach to rehabilitation, as opposed to a horticultural approach should be adopted. For example, communities of indigenous plants enhance biodiversity, a desirable outcome for the area. This approach can significantly reduce long term costs as less maintenance would be required over conventional landscaping methods as well as the introduced landscape being more sustainable. • Progressive rehabilitation of all cut to fill embankments should be carried out immediately after they have been established. • Paint all structures with colours that reflect and compliment the colours of the surrounding landscape. To further reduce the potential of glare, the external surfaces of structures should be

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
	<ul style="list-style-type: none"> Any soil must be exposed for the minimum time possible once cleared of vegetation to avoid prolonged exposure to wind and water erosion and to minimise dust generation. <p>Landscaping and ecological approach</p> <ul style="list-style-type: none"> Where new vegetation is proposed to be introduced to the site, an ecological approach to rehabilitation, as opposed to a horticultural approach should be adopted. For example, communities of indigenous plants enhance biodiversity, a desirable outcome for the area. This approach can significantly reduce long term costs as less maintenance would be required over conventional landscaping methods as well as the introduced landscape being more sustainable. Establish a vegetated earth berm screen (approximately 3 m high) along the western terrace of the adit (portal) area to screen sensitive views from residences immediately west of the site. Progressive rehabilitation of all cut to fill embankments should be carried out immediately after they have been established. <p>Structures and associated infrastructure</p> <ul style="list-style-type: none"> Paint all structures with colours that reflect and compliment the colours of the surrounding landscape. To further reduce the potential of glare, the external surfaces of structures should be articulated or textured to create interplay of light and shade. Avoid pure whites and blacks. <p>Good house-keeping</p> <ul style="list-style-type: none"> During operation, all roads will require an effective dust suppression management programme, such as regular wetting and/or the use of non-polluting chemicals that will retain moisture in the road surface. <p>Lighting</p> <ul style="list-style-type: none"> Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site i.e. lights are to be aimed away from residential areas (south and west of the site) towards the mountain. Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on illegal entry to the site. Minimise the number of light fixtures to the bare minimum, including security lighting. 	<p>articulated or textured to create interplay of light and shade. Avoid pure whites and blacks.</p> <ul style="list-style-type: none"> Implement dust management measures stipulated in the air quality section. Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site i.e. lights are to be aimed away from residential areas (south and west of the site) towards the mountain. Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on illegal entry to the site. Minimise the number of light fixtures to the bare minimum, including security lighting.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
Traffic impact assessment (Aurecon, July 2019)	<ul style="list-style-type: none"> It is recommended that Argyll Street be resurfaced and repaired before the colliery generated traffic is added to the road network as the road is already in very poor condition. This action is required by the local municipality. 	<ul style="list-style-type: none"> It is recommended that Argyll Street be resurfaced and repaired before the colliery generated traffic is added to the road network as the road is already in very poor condition. This action is required by the local municipality. It is recommended that the intersection at the P272 and the access road must be upgraded according to relevant road safety regulations. <p>All transporters must have relevant permits applicable to the specific vehicle.</p>
<p>Freshwater Impact Assessment (Confluent, 2019)</p> <p>Wetland Impact Assessment (Confluent, 2019)</p>	<p>Water quality</p> <p>Construction</p> <ul style="list-style-type: none"> Develop and implement environmental management and auditing systems to ensure that pollution prevention and impact minimization plans developed in the design and feasibility stages are fully implemented; All potentially hazardous substances should be stored in secure facilities in an appropriately bunded area that falls within an appropriate storm water management network to ensure that contaminants are not released to water resources through storm water runoff. The bund height of the bund wall should be able to contain 110 % of any stored volume, or 25% of the volume where multiple tanks are stored; Storage containers for hazardous substances should be regularly inspected to prevent leaks and unnecessary seepage or contamination of storm water; Vehicle maintenance and refueling should only take place within the delineated 'dirty' area of the mine (i.e. designated workshop and wash-bay); Mixing and/or decanting of all chemicals and hazardous substances must take place on a tray, shutter boards or on an impermeable surface and must be protected from the ingress and egress of stormwater; An emergency spill response procedure must be formulated and staff is to be trained in spill response. All necessary equipment for dealing with spills of fuels/chemicals must be available at the site. Spills must be cleaned up immediately and contaminated soil/material disposed of appropriately at a registered site; Portable toilets should be provided at a rate of 1 toilet per 10 users and use of the surrounding environment should be prohibited. Toilets must be located outside of the 1:100 year flood line or outside of the buffer area of any delineated watercourse. Waste from chemical toilets must be disposed of regularly (at least once a week) and in a responsible manner by a registered waste contractor. 	<ul style="list-style-type: none"> All hazardous substances must be stored in bunded areas with the capacity to contain 110% of the total storage capacity or 25% of the storage capacity where multiple tanks are stored. Implement a stormwater management system that complies with GNR 704 to separate clean and potentially contaminated runoff. Contaminated runoff must be diverted to a pollution control dam. All dirty water channels must be inspected and cleaned regularly to prevent blockages. Maintenance and refuelling of machinery and vehicles must only be conducted in the dedicated services platform area. Develop and implement an emergency procedure to deal with large scale spillages. Drip trays are to be provided where mobile equipment has the potential to drip oil. Spill response equipment must be readily available on site. Develop a freshwater quality monitoring programme to assess potential impacts from the mining operation. <p>Closure</p> <p>Remove potential sources of pollution such as hydrocarbon-contaminated soils and dispose of at an authorised disposal facility</p>

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
	<ul style="list-style-type: none"> • Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment and should be disposed of at an appropriate waste facility by a registered waste contractor. <p>Operations</p> <ul style="list-style-type: none"> • All operational planning and activities should be undertaken with eventual mine closure in mind, such that mining operations can end in a manner that minimizes the final risks and liabilities in the post-closure phase. To this end a mining plan that explicitly considers mine closure and rehabilitation must be prepared and approved before mining begins. The plan should be updated regularly (every 3 to 5 years) as mining progresses; • During the mine planning phase, a detailed geochemical characterisation of the coal and waste material should be undertaken and handling and placement strategies for the material should then be based on the geochemical characterization of the material, with the aim of placing the material such that the long-term pollution potential is minimized; • Develop a comprehensive Storm Water Management Plan that complies to guidelines stipulated in GN704. The plan should inter alia separate dirty areas (any area at a mine or activity which causes, has caused or is likely to cause pollution of a water resource) from clean areas, minimize the footprint of the dirty area and divert contaminated storm water to correctly sized and located pollution control dams water by means of an appropriately designed storm water network. Clean runoff volume should be maximized and diverted away from dirty areas and straight to natural water bodies; • Storm water channels should be maintained and cleaned regularly to ensure that their capacity to convey contaminated runoff from stockpiles and other mine infrastructure areas are not compromised; • Detailed water and salt balances that take account of climatic and operational variability should be developed and used as a planning tool to ensure that all pollution control dams are adequately sized and are integrated into a robust water reuse and reclamation strategy to ensure that captured contaminated water is effectively reused within the mining operations and that system spillages to the environment are avoided; • Water collection and pumping systems that are capable of rapidly pumping accumulated water (i.e. from groundwater recharge) out of the adit should be installed to minimize the contact time between water and geochemically reactive materials; • Ensure that the mine plan includes contingency planning, equipment and training to enable operators to deal with common and foreseeable process upsets, leaks and releases as well as extreme climatic events; 	

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	<ul style="list-style-type: none"> • Develop detailed water quality monitoring systems that are capable of early detection of potential water quality problems at all facilities where potential for contamination of water resources exists. This monitoring system should also be extended to watercourses that could potentially receive contaminated water. The monitoring programme should lead to rapid and effective management actions aimed at addressing the source of pollution source and minimizing it to the full extent possible; • Proper storage and handling and monitoring of fuel and chemicals used on site to minimize the risk of spillages to the environment; • Reduction of dust by early revegetation and by good maintenance of roads and work areas. Specific dust suppression measures, such as minimizing drop distances and covering equipment and storage piles, may be required for ore and product handling and loading facilities. Release of dust from crushing and other ore processing and beneficiation operations should be controlled; and • The structural integrity of diversion berms that separate the clean and dirty water areas must be regularly monitored and maintained for the duration of the operational phase. <p>Closure</p> <ul style="list-style-type: none"> • Remove potential sources of pollution such as hydrocarbon-contaminated soils and dispose of at an authorised disposal facility; and • Implement as many of the closure measures as possible during the operational phase of the mine and institute appropriate monitoring programmes in order to demonstrate the actual performance of the various management actions during the life of mine, rather than after decommissioning. 	
<p>Freshwater Impact Assessment (Confluent, 2019)</p> <p>Wetland Impact Assessment (Confluent, 2019)</p>	<p>Sedimentation and erosion</p> <p>Construction</p> <ul style="list-style-type: none"> • Clearing of vegetation should be limited to areas where it is absolutely needed. • Vegetation clearing activities should preferably be undertaken during the dry season. • Construction activities should be planned so as to minimise the duration of exposure of bare soils on site, especially on steep slopes. • Run-off generated from cleared and disturbed areas such as access roads and slopes that drain into watercourses must be controlled using erosion control and sediment trapping measures. These control measures must be established at regular intervals perpendicular to the slope to break surface flow energy and reduce erosion as well as trap sediment. 	<p>Construction</p> <ul style="list-style-type: none"> • Clearance of vegetation must be limited to demarcated areas. • Minimise time that soil is exposed during construction. • Implement erosion control measures during construction phase, i.e. berms, sandbags. • Ensure that excavations are compacted after construction has been completed. • Additional measures must be implemented if increased erosion is detected. <p>Operational</p>

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	<ul style="list-style-type: none"> • Berms, sandbags and/or silt fences employed must be maintained and monitored for the duration of the construction phase and repaired immediately when damaged. The berms, sandbags and silt fences must only be removed once vegetation cover has successfully recolonized the disturbed areas post-rehabilitation. • Ensure that any trenches or excavations are closed and compacted immediately after construction is completed; and • After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled-in with appropriate material and silt fences or fascine work must be established along the gully for additional protection until grass has re-colonised the rehabilitated area. <p>Operational Phase</p> <ul style="list-style-type: none"> • Roads should be maintained regularly to ensure that surface water drains freely off the road preventing erosion; • Soils compacted by heavy machinery in areas that are not utilised post construction can be ripped to allow infiltration; • Run-off generated from impervious areas must be controlled using erosion control and sediment trapping measures. These control measures must be established at regular intervals perpendicular to the slope to break surface flow energy and reduce erosion as well as trap sediment; • Berms, sandbags and/or silt fences employed must be maintained and monitored for the duration of the operational phase and repaired immediately when damaged. The berms, sandbags and silt fences must only be removed once vegetation cover has successfully recolonized the disturbed areas post-rehabilitation; • After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled-in with appropriate material and silt fences or fascine work must be established along the gully for additional protection until grass has re-colonised the rehabilitated area. <p>Closure</p> <ul style="list-style-type: none"> • Ensure that vegetation establishment on the rehabilitated area occurs as soon as possible to prevent runoff high in sediment content; 	<ul style="list-style-type: none"> • Roads should be maintained regularly to ensure that surface water drains freely off the road preventing erosion. • Run-off generated from impervious areas must be controlled using erosion control and sediment trapping measures. These control measures must be established at regular intervals perpendicular to the slope to break surface flow energy and reduce erosion as well as trap sediment. • Additional measures must be implemented if increased erosion is detected. <p>Closure</p> <ul style="list-style-type: none"> • Ensure that vegetation establishment on the rehabilitated area occurs as soon as possible to prevent runoff high in sediment content. • Leaving the storm water management structures in place during the decommissioning and post closure phase until the rehabilitation process is completed. • Storm water management structures should be inspected after large storm events to ensure that there are no blockages or breaches. <p>Soils compacted by heavy machinery can be ripped to allow infiltration</p>

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	<ul style="list-style-type: none"> Leaving the storm water management structures in place during the decommissioning and post closure phase until the rehabilitation process is completed. This will ensure that sediment generated during this phase is captured; Storm water management structures should be inspected after large storm events to ensure that there are no blockages or breaches. Should blockages or breaches occur, then immediate action should be undertaken to remove debris or to repair breached areas; and Soils compacted by heavy machinery can be ripped to allow infiltration 	
<p>Freshwater Impact Assessment (Confluent, 2019)</p> <p>Wetland Impact Assessment (Confluent, 2019)</p>	<p>Disturbance to Aquatic Habitats</p> <p>Construction</p> <ul style="list-style-type: none"> During the construction phase, all watercourses other than the immediate area of the Sterkstroom crossing are to be demarcated as no-go areas for vehicles and construction personnel. In this respect, recommended buffer zones should be strictly adhered to. All watercourses and their respective buffer zones should be clearly identified and demarcated. The map presented in Figure 14 should be used to guide the footprint of the mine layout in this respect; Solid waste generated during the operational phase should be disposed of as per the requirements for the waste class; An alien invasive plant management plan needs to be compiled and implemented prior to construction to control and prevent the further spread of invasive aliens; <p>For the bridge crossing</p> <ul style="list-style-type: none"> The design of the bridge crossing must ensure that the creation of turbulent flow in the system is minimised, in order to prevent downstream erosion; No support pillars should be constructed within the active channel of the river; The crossing must take place at right angles to the course of the river; Stabilisation of river banks in the vicinity of the bridge crossing by employing one or a combination of the following individual techniques: <ul style="list-style-type: none"> Re-sloping of banks to a maximum of a 1:3 slope; Revegetation of re-profiled slopes; Temporary stabilisation of slopes using geotextiles; and Installation of gabions and reno mattresses. It must be ensured that flow connectivity along the river is maintained and that the bridge crossing will not result in any barriers preventing biota (i.e. fish) moving upstream and downstream of the crossing. 	<p>Construction</p> <ul style="list-style-type: none"> All water watercourses other than the immediate area of the Sterkstroom crossing are to be demarcated as no-go areas for vehicles and construction personnel. Develop an alien invasive plant management plan to prevent further spreading of such plants <p>For the bridge crossing</p> <ul style="list-style-type: none"> The design of the bridge crossing must ensure that the creation of turbulent flow in the system is minimised, in order to prevent downstream erosion; No support pillars should be constructed within the active channel of the river; The crossing must take place at right angles to the course of the river; Stabilisation of river banks in the vicinity of the bridge crossing by employing one or a combination of the following individual techniques: <ul style="list-style-type: none"> Re-sloping of banks to a maximum of a 1:3 slope; Revegetation of re-profiled slopes; Temporary stabilisation of slopes using geotextiles; and Installation of gabions and reno mattresses. The mine must ensure that flow connectivity along the river is maintained and that the bridge crossing will not result in any barriers preventing biota (i.e. fish) moving upstream and downstream of the crossing." <p>Operational</p>

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
	<p>Closure</p> <ul style="list-style-type: none"> • Ensure that vegetation establishment on the rehabilitated area occurs as soon as possible to prevent runoff high in sediment content; • Leaving the storm water management structures in place during the decommissioning and post closure phase until the rehabilitation process is completed. This will ensure that sediment generated during this phase is captured; • Storm water management structures should be inspected after large storm events to ensure that there are no blockages or breaches. Should blockages or breaches occur, then immediate action should be undertaken to remove debris or to repair breached areas; and • Soils compacted by heavy machinery can be ripped to allow infiltration 	<ul style="list-style-type: none"> • Roads should be maintained regularly to ensure that surface water drains freely off the road preventing erosion. • Run-off generated from impervious areas must be controlled using erosion control and sediment trapping measures. These control measures must be established at regular intervals perpendicular to the slope to break surface flow energy and reduce erosion as well as trap sediment. • Additional measures must be implemented if increased erosion is detected. <p>Closure</p> <ul style="list-style-type: none"> • Ensure that vegetation establishment on the rehabilitated area occurs as soon as possible to prevent runoff high in sediment content. • Leaving the storm water management structures in place during the decommissioning and post closure phase until the rehabilitation process is completed. • Storm water management structures should be inspected after large storm events to ensure that there are no blockages or breaches. <p>Soils compacted by heavy machinery can be ripped to allow infiltration</p>
Construction		
Baseline Faunal Biodiversity Assessment (Agreenco, July 2019)	Habitat disturbance	
	<p>General</p> <ul style="list-style-type: none"> • Avoid excessive destruction of the vegetation and landscape during the construction phase by limiting the construction footprint as much as possible to the footprint required for infrastructure. • Time the clearing of the landscape and initiation of construction to coincide with the dry winter months as few species will be breeding or nesting during this time. • Rehabilitate and monitor any disturbed areas that do not fall within the final infrastructure footprints and ameliorate when needed. • Offset the loss of habitat by implementing an invasive alien plant eradication plan in areas not disturbed by mining and revegetate with functional indigenous species sourced from an indigenous nursery. • Initiate a biodiversity monitoring programme to track the change in faunal community composition and structure from the onset of the mining activities. 	<p>General</p> <ul style="list-style-type: none"> • Limit construction activities to predetermined demarcated area. • Rehabilitate and monitor any disturbed areas that do not fall within the final infrastructure footprints and improve when needed. • Offset the loss of habitat by implementing an invasive alien plant eradication plan in areas within the lease area not disturbed by mining • Initiate a biodiversity monitoring programme to track the change in faunal community composition and structure from the onset of the mining activities. • If possible, time the clearing of the landscape and initiation of construction to coincide with the dry winter months as few species will be breeding or nesting during this time.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
	<p>Avian</p> <ul style="list-style-type: none"> where possible do not remove large and/or mature trees. Before clearance of the landscape, assess if any nesting of threatened species is taking place and develop species specific mitigation plans in consultation with an avian specialist, if required at that time. <p>Amphibians</p> <p>Prevent spillages of hydrocarbons into the drainage systems. Included habitat structure design into the rehabilitation design plans of the haul road stream crossing. Limit construction of stream crossing to dryer winter season.</p> <p>Reptiles</p> <p>In the days preceding onset of construction of the services platforms and the Adit and run-of-mine stockpile infrastructure conduct a trapping and relocation exercise with pitfall and funnel traps.</p> <p>Mammals</p> <p>In the days before the bulldozing of areas commence, increase human activity (noise and movement) in the identified areas to allow mammals to disperse. Inspect the areas for burrows or lays of larger mammals and develop species specific relocation plans if required.</p>	<p>Avian</p> <p>Where possible do not remove large and/or mature trees. Before clearance of the landscape, assess if any nesting of threatened species is taking place and develop species specific mitigation plans in consultation with an avian specialist, if required at that time.</p> <p>Amphibians</p> <p>Prevent spillages of hydrocarbons into the drainage systems. Included habitat structure design into the rehabilitation design plans of the haul road stream crossing.</p> <p>Reptiles</p> <p>In the days preceding onset of construction activities, the mine should consider conducting a trapping and relocation exercise with pitfall and funnel traps.</p> <p>Mammals</p> <p>Inspect the areas for burrows or lays of larger mammals and develop species specific relocation plans if required.</p>
	Faunal road mortalities	
	<p>Even though the risk is low, the presence of nocturnal threatened mammals and nocturnal raptors on the site requires some mitigation for this risk. Enforce speed restrictions and minimum following distance regulations (> 50 m following distance) to allow for easy observation of fauna that might be present in the road or approaching the road.</p>	<p>Enforce speed restrictions and minimum following distance regulations (> 50 m following distance) to allow for easy observation of fauna that might be present in the road or approaching the road.</p>
	Degradation of CBA/corridor	
	<ul style="list-style-type: none"> Establish no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile (Figure 6.1). Put preventative measures in place to direct seepage from the legacy discard facility and run-of-mine stockpile away from the natural drainage lines. Develop a land management plan for sustainable harvesting of trees in these areas if local communities require to do so for medicinal or cultural practices. Rehabilitate degraded areas that have a direct relationship with the CBA and corridor. 	<ul style="list-style-type: none"> Establish no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile <p>Rehabilitate degraded areas that have a direct relationship with the CBA and corridor.</p>
	Poaching and snaring	

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	<ul style="list-style-type: none"> Do not allow staff (temporary or permanent) to harvest wildlife on the lease. Ensure that all contractors are providing their staff with sufficient nutrition while they are on site. Educate staff on the threatened species present on site how snaring can be detrimental to their existence. <p>Increased risk of veld fires due to underutilisation of veld and/or increased human presence on site.</p> <p>Implement a fire management and prevention plan.</p>	<ul style="list-style-type: none"> Prohibit harvesting/poaching of wildlife on site. <p>Conduct awareness training.</p> <p>Implement a fire management and prevention plan.</p>
Operations		
Baseline Faunal Biodiversity Assessment (Agreenco, July 2019)	Habitat disturbance	
	<p>Although the greatest loss of habitat will occur during the construction phase, mitigations during the operational phase will be required to offset the initial loss and to prevent further loss of diversity due to operational mining impacts.</p> <p>General - Continue with annual monitoring of faunal diversity to be able to track the change in faunal diversity during the life of mine and implement specific mitigation measures if the data shows that it is required. Continue with rehabilitation of disturbed areas and the monitoring and management of rehabilitating areas. Continue with invasive alien plant eradication and habitat recovery programme to offset initial loss of habitat. Identify and establish areas on the lease where no new disturbances will be allowed and manage those areas to maintain ecological functionality and services for faunal species. Examples of possible refuge areas can be seen in Figure 6.1. Avian - Provide nest boxes on taller buildings or in tall trees for raptors (owls, falcons, eagles) that utilise the site. This can be done in consultation with avian specialist to ensure optimal placing. Amphibians - Ensure that the water quality of the Sterkstroom stream is not negatively impacted by mining activities. Ensure that erosion control measures are in place to prevent the shallow aquatic habitats from silting up. Monitor the in-stream rehabilitation success at the haul road stream crossing and manage when needed.</p>	<ul style="list-style-type: none"> Continue with annual monitoring of faunal diversity to be able to track the change in faunal diversity during the life of mine and implement specific mitigation measures if the data shows that it is required. Implement invasive alien plant management plan. Identify and establish areas on the lease where no new disturbances will be allowed and manage those areas to maintain ecological functionality Ensure that erosion control measures are in place to prevent the shallow aquatic habitats from silting up. <p>Monitor the in-stream rehabilitation success at the haul road stream crossing and manage when needed.</p>
	Pest species habitat creation	

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	<p>Design buildings with bird deterrent measures to deter pest species from nesting on/in the buildings. Implement a waste management system that will prevent the accumulation of kitchen waste to deter the establishment of pest rodent populations. Due to the presence of Vervet monkeys on the lease, it will likely be required to fit rubbish bins with primate deterrent features to avoid primates from accessing the bins and becoming a nuisance. Provision of nest boxes for owls will allow these birds to facilitate management of pest rodent populations.</p>	<ul style="list-style-type: none"> • Design buildings with bird deterrent measures to deter pest species from nesting on/in the buildings. • Implement adequate waste management practices to prevent rodent infestation. <p>Due to the presence of Vervet monkeys on the lease, it will likely be required to fit rubbish bins with primate deterrent features to avoid primates from accessing the bins and becoming a nuisance.</p>
	Faunal road mortalities	
	Refer to construction phase	
	Degradation of CBA	
	Refer to construction phase	
	Poaching and snaring	
	Refer to construction phase	
	Increased risk of veld fires	
	<p>Continuation of the fire prevention and management plan will be required. Additionally, this should include controlled burn events that simulate natural fires if the available biomass increases unnaturally due to underutilisation and increased weed and invasive plants.</p>	<p>Implement fire prevention and management plan. Conduct controlled fires in the case of bush encroachment that may increase fire risk.</p>
Closure		
	Habitat disturbance	
<p>Baseline Faunal Biodiversity Assessment (Agreenco, July 2019)</p>	<p>As far as possible, limit new disturbances to the existing footprint. Rehabilitate all disturbed areas to a point similar to the natural habitats of the area. Establish an indigenous nursery during the operational phase that can be used to revegetate the rehabilitating areas with functional plant species. Continue with faunal biodiversity monitoring until an equilibrium state has been reached. Continue with rehabilitation monitoring until a functional self-sustaining vegetation community has been established. At the services platforms, reinstate habitat structure with sufficient</p>	<ul style="list-style-type: none"> • Limit new disturbance. • Rehabilitate all disturbed areas to a point similar to the natural habitats of the area. <p>Continue with faunal monitoring and monitoring success of rehabilitation.</p>

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	refugia for reptile species. Demolition of the haul road stream crossing should be conducted during the dry winter months to avoid disturbing breeding attempts of amphibians at this site.		
	Faunal road mortalities		
	Refer to construction phase		
	Degradation of CBA		
	The no-go areas should be maintained during the closure phase. Areas that will need to be rehabilitated within the CBA/corridor should be rehabilitated to an end product that is similar in function and structure to the rest of the CBA at the respective altitudes.	The no-go areas should be maintained during the closure phase.	
	Poaching and snaring		
	Refer to construction phase		
	Increased risk of veld fires		
Refer to construction phase			
Construction			
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	Loss of indigenous vegetation		
	Limit disturbance of vegetation to only the size required for the infrastructure footprint. Avoid excessive damage of vegetation in the VD4 and VD3 communities by demarcating areas that can be disturbed. Rehabilitate any excessive disturbed areas immediately. Offset loss by initiating a concurrent IAP management programme coupled with rehabilitation of areas cleared of alien vegetation on the entire lease. This rehabilitation programme should incorporate the development of an indigenous nursery that can provide stock to revegetate areas cleared of alien plants. Start with an annual monitoring programme to track the change in vegetation diversity on the lease.	<ul style="list-style-type: none"> • Limit construction activities to predetermined demarcated area. • Rehabilitate and monitor any disturbed areas that do not fall within the final infrastructure footprints and improve when needed. • Offset the loss of habitat by implementing an invasive alien plant eradication plan in areas within the lease area not disturbed by mining • Initiate a biodiversity monitoring programme to track the change in vegetation community composition and structure from the onset of the mining activities. 	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT	
	Increase of Invasive alien plants		
	<p>Instate an IAP monitoring, eradication, and management plan to control all IAPs that are establishing on newly disturbed areas. Include a buffer of 50 m around newly disturbed areas in the IAP management programme</p>	<p>Implement Alien Plant monitoring, eradication, and management plan to control all IAPs that are establishing on newly disturbed areas. Include a buffer of 50 m around newly disturbed areas in the IAP management programme</p>	
	Loss of topsoil		
	<p>Protect the topsoil from any leaching that would result from the run of mine stockpile or other activities at the mine. Where possible, stockpile topsoil in a manner that will protect the integrity of the existing seedbank and microbial community. Immediately rehabilitate stockpiles to prevent erosion and construct a bunding downslope of the stockpile to capture any eroded materials. Topsoil stockpiles should be included in the IAP management plan as there is an already existing IAP seedbank present in the landscape.</p>	<ul style="list-style-type: none"> • Stripped topsoil must be stored for rehabilitation purposes. • Prevent erosion on topsoil stockpiles. • Prevent encroachment of alien invasive plants on the soil stockpiles. 	
	Degradation of CBA		
	<p>Establish no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run of mine stockpile (Figure 6.1). Put preventative measures in place to direct seepage from the legacy discard facility and run of mine stockpile away from the natural drainage lines. Develop a land management plan for sustainable harvesting of trees in these areas if local communities require to do so for medicinal or cultural practices. Include a 100 m buffer zone around the mentioned infrastructure in the IAP management plan (Figure 6.1). Rehabilitate degraded areas that have a direct relationship with the CBA and corridor.</p>	<ul style="list-style-type: none"> • Establish no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile • Rehabilitate degraded areas that have a direct relationship with the CBA and corridor. 	
Increased risk of veld fires			
<p>Implement a fire management and prevention plan.</p>	<p>Implement a fire management and prevention plan.</p>		

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Operations			
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	Loss of indigenous vegetation		
	<p>Avoid excessive damage of vegetation in the VD4 and VD3 communities by demarcating areas that can be disturbed. Rehabilitate any excessive disturbed areas immediately. Offset the loss of the initial establishment phase through continuation of the concurrent IAP management programme coupled with rehabilitation of areas cleared of alien vegetation on the entire lease. Continue with the annual monitoring programme to track the change in vegetation diversity on the lease.</p>	<ul style="list-style-type: none"> Maintain no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile. The footprint should not be expanded outside the site plan. 	
	Increase of Invasive alien plants		
	<p>Continue with the IAP monitoring, eradication, and management plan to control all IAPs that are establishing on newly disturbed areas. Include a buffer of 50 m around all infrastructure in the IAP management programme. Rehabilitate areas cleared of alien plants by re-vegetating with indigenous species that can provide similar or better ecosystem services than the IAPs that preceded them.</p>	<p>Implement an Invasive Alien Plant monitoring, eradication, and management plan to control all IAPs that are establishing on newly disturbed areas. Include a buffer of 50 m around newly disturbed areas in the IAP management programme</p>	
	Loss of topsoil		
	<p>Monitor and manage rehabilitated topsoil stockpiles and disturbed areas. Maintain any bunding that were constructed to capture eroded material. Include all topsoil stockpiles and rehabilitating areas in the IAP management plan.</p>	<ul style="list-style-type: none"> Stripped topsoil must be stored for rehabilitation purposes. Prevent erosion on topsoil stockpiles. Prevent encroachment of alien invasive plants on the soil stockpiles. 	
Degradation of CBA			
<p>Maintain and manage no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run of mine stockpile (Figure 6.1). Develop a monitoring plan to assess the state (Structure and function) of biodiversity in the CBA and corridor. Put preventative measures in place to direct seepage from the legacy discard facility and run of mine stockpile away from the natural drainage lines. Implement a land management plan for sustainable harvesting of trees in these areas if local communities require to do so for medicinal or cultural practices. Include a 100 m buffer zone around the mentioned infrastructure in the IAP management plan</p>	<ul style="list-style-type: none"> Establish no-go areas west and north of the Adit, south and west of the legacy discard facility, and north of the run-of-mine stockpile Rehabilitate degraded areas that have a direct relationship with the CBA and corridor. 		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT	
	(Figure 6.1). Monitor rehabilitated areas that have a direct relationship with the CBA and corridor and take remedial actions where needed.		
Dust generation from traffic on haul road that will cover plants (reduced photosynthesis and clogging of stomata)			
	Implement dust control methods to reduce the amount of dust generated by traffic on the haul roads.	Refer to air quality management section	
Increased risk of veld fires			
	During the operational phase the risk is increased due to a greater possibility that the veld will be underutilised. Continuation of the fire prevention and management plan will be required. Additionally, this should include controlled burn events that simulate natural fires if the available biomass increases unnaturally due to underutilisation and increased weed and invasive plants.	Implement a fire management and prevention plan.	
Closure			
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	Loss of indigenous vegetation Limit disturbance of vegetation to only the size required for the infrastructure footprint. Avoid excessive damage of vegetation in the VD4 and VD3 communities by demarcating areas that can be disturbed. Rehabilitate any excessive disturbed areas immediately. Offset loss by initiating a concurrent IAP management programme coupled with rehabilitation of areas cleared of alien vegetation on the entire lease. This rehabilitation programme should incorporate the development of an indigenous nursery that can provide stock to revegetate areas cleared of alien plants. Start with an annual monitoring programme to track the change in vegetation diversity on the lease.	<ul style="list-style-type: none"> • Limit closure activities to predetermined demarcated areas. • Rehabilitate site according to rehabilitation plan. 	
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	Increase of Invasive alien plants Implementation of a successful IAP management plan during the establishment and operational phases will reduce the impact of IAPs at closure. However, due to the existing presence of IAPs on the site and the creation of disturbed areas during the demolition phase will provide new habitat for IAPs to colonise. The IAP monitoring, management and eradication plan should therefore continue until a self-sustaining natural vegetation community has established and matured on the rehabilitated sites.	<ul style="list-style-type: none"> • Continue with the implementation of the alien and invasive plant eradication plan and monitor the success thereof. 	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	Loss of topsoil	
	Concurrent rehabilitation during the operational phase will help to protect topsoil during the closure phase. Additionally, newly disturbed areas should be rehabilitated immediately as the decommissioning of the site progresses. Rehabilitation should be monitored and until a self-sustaining indigenous vegetation community has developed on the rehabilitating areas. Due to the steep slopes associated with the site, care must be taken during the design of the rehabilitation landscape. All rehabilitated areas should be included in the IAP monitoring and management plan.	Not applicable. Relates to open cast mining.
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	Dust generation from traffic on haul road that will cover plants	
	Implement dust control methods to reduce the amount of dust generated by traffic on the haul roads.	Refer to air quality section
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	Altered water flow through landscape (Dirty water systems preventing natural flow of water over landscape)	
	During the establishment phase natural water flow paths through the landscape should be identified and delineated. Attempts should be made to re-instate these flow paths during the closure phase. Care must be taken to avoid the formation of preferential flow areas that could lead to erosion of the disturbed topsoil.	<ul style="list-style-type: none"> • Re-instate natural flow paths. Care must be taken to avoid the formation of preferential flow areas that could lead to erosion of the disturbed topsoil.
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	Degradation of CBA/corridor	
	The no-go areas should be maintained during the closure phase. Areas that will need to be rehabilitated within the CBA/corridor should be rehabilitated to an end product that is similar in function and structure to the rest of the CBA at the respective altitudes. Rehabilitation and IAP monitoring and management should continue until a self-sustaining vegetation community has established on the rehabilitation sites.	Limit closure activities to predetermined demarcated areas and not intrude in CBAs.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
Baseline Vegetation Biodiversity Assessment (Agreenco, July 2019)	<p>Increased risk of veld fires</p> <p>If the fire prevention and management plan is implemented properly during the operational phase, then the main risk of fires will come from the increased human activity on the site during the decommissioning and demolishing phase. The fire management and prevention plan should continue until closure is granted.</p>	Implement fire prevention and management plan
Heritage Impact Assessment (PGS Heritage)	<p>BAL 2 – Old Homestead</p> <ul style="list-style-type: none"> • Archival and historical research must be undertaken on the farmstead and the persons who owned and occupied it. Such research may include an assessment of old aerial photographs as well as research on the McPhail family, and in particular Duncan Dugald MacPhail and Ian Alistair MacPhail. • An archaeological site layout plan must be compiled using accepted archaeological techniques. • During the recording of the archaeological site layout plan, an attempt must be made to identify any archaeological middens associated with the sites. • An archaeological mitigation report must be compiled. • A destruction permit application must be lodged with AMAFA to allow for the destruction of site BALG 2. <p>BAL 3 – African Homestead</p> <p>The following initial mitigation measure is required:</p> <ul style="list-style-type: none"> • A social consultation process to assess whether any local residents or the wider public are aware of the presence of graves here. <p>Depending on the outcome of the social consultation process, three different outcomes would be the result, namely:</p> <ul style="list-style-type: none"> • Outcome 1: The social consultation absolutely confirms that no graves are located here. • Outcome 2: The social consultation absolutely confirms that graves are located here. • Outcome 3: The social consultation does not yield any confident results. <p>Following mitigation measures would be required for sites falling under Outcome 1:</p>	<p>BAL 2 – Old Homestead</p> <p>The following mitigation has already been applied and is attached as Annexure 17:</p> <ul style="list-style-type: none"> • Generate archaeological site layout plan. • Identify any archaeological middens associated with the sites. • An archaeological mitigation report must be compiled and submitted to AMAFA. <p>The following mitigation is in process and has been included in the EMPr:</p> <ul style="list-style-type: none"> • A destruction permit application must be lodged with AMAFA to allow for the destruction of site BALG 2. <p>BAL 3 – African Homestead</p> <p>The following mitigation has already been applied:</p> <ul style="list-style-type: none"> • A social consultation process has already been undertaken to assess whether graves are present at the site. <p>The following mitigation will be applied:</p> <ul style="list-style-type: none"> • A 50m buffer zone will be established around the identified graves to prevent impacts.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT	
		REFERENCE IN REPORT	
Hydrogeological report (CGS)	<p>Construction:</p> <ul style="list-style-type: none"> Minimise dewatering by sealing off excavations as soon as possible. Grouting of intersected fractures/fissure Establishment of good waste management practices on site. Monitor abstraction quantities/water levels. Monitor water levels. <p>Operational</p> <ul style="list-style-type: none"> Cover rock dumps or stockpiles with geomembrane to reduce rainfall infiltration and hence, poor quality percolation into the aquifer. PCD's should be lined. Limit blasting. Manage inflows. Good housekeeping, and adherence to good health and safety practices. A sustainable aquifer yield should be determined for the abstraction boreholes. Abstraction should not exceed the sustainable yield of the local aquifer 	<p>Construction</p> <ul style="list-style-type: none"> Minimise dewatering by sealing off excavations as soon as possible. Monitor abstraction quantities/water levels." Grouting of intersected fractures/fissure Monitor water levels. Establishment of good waste management practices on site. <p>Operational</p> <ul style="list-style-type: none"> Minimize dewatering (if possible) during dry seasons. Lining of PCD. Follow blasting procedure which adheres to relevant standards and guidelines. Implement measures stipulated in the surface water resources section related to hazardous substances management. Abstraction should not exceed the sustainable yield of the local aquifer as determined by the geohydrological specialist study 	
Level 3 Hydro pedological Assessment for the Old Balgray Colliery (The Biodiversity Company)	<ul style="list-style-type: none"> A geotechnical assessment has been recommended to determine the stability of the bedrock beneath the responsive hydro pedological zones to determine the possibility of cracks forming within the rock which will lead to the responsive zones (hillslope seeps) drying up; A blasting assessment has been recommended to determine the possibilities of cracks forming in the upper bedrock layer during blasting; A groundwater assessment/geochemical assessment has been recommended to determine the loss of flow from groundwater aquifers to the watercourse; and It is recommended that water accumulating in the adits and underground mining areas be recharged back into the groundwater reserves with special care taken in regard to contamination (i.e. Acid Mine Drainage (AMD)). 	<p>It is recommended that a geotechnical assessment (if required) should be conducted to determine the stability of the bedrock beneath the responsive hydro pedological zones to determine the possibility of cracks forming within the rock which will lead to the responsive zones (hillslope seeps) drying up;</p> <p>It is recommended that a blasting assessment (if required) should be conducted to determine the possibilities of cracks forming in the upper bedrock layer during blasting;</p> <p>It is recommended that water accumulating in the adits and underground mining areas be recharged back into the groundwater reserves with special care taken in regard to contamination (i.e. Acid Mine Drainage (AMD)).</p>	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
Social Impact Assessment (Urban Econ)	<p>Construction</p> <ul style="list-style-type: none"> • Procure goods and services, as far as practically possible, from the local municipality • Advise on the set-up of a skills desk and where it will be situated. Offer training to increase employability • Devise and implement skills training and skills transfer • Hire majority of local residents who will boost local economy through expenditure that empowers local businesses and economy • Manage recruitment process to control expectations and unnecessary in-migration. • Implement controlled access to project site and monitor activity in immediate surrounding sites. • Implement controlled access to project site. • Set up local community safety forum. • Maintain contact with major community stakeholders. • The construction activities and movement of construction vehicles into the project area should be restricted to certain hours of the day. • Movement of construction vehicles into the project area should be controlled and restricted to certain hours of the day. • Mitigation measures proposed by visual and noise specialists should be strictly adhered to, in order to minimise the probability and intensity of the visual exposure in the area. • Where possible, conduct independent appraisals and valuations of affected properties and consider buying these out • Where possible, invest in social amenities for the surrounding neighbourhood • Educate and inform the affected parties on the potential environmental impacts that could ensue and the activities to adequately manage perceptions regarding potential effects of the project on the surrounding land uses. <p>Operational</p> <ul style="list-style-type: none"> • Maximise benefit for local economy through local procurement • Offer skills development programme to serve mining market in the region and create local employability • Skills levels in municipality and for benefitting individuals will improve due to employment created. • Employing locally will increase benefit to local households and inadvertently the 	<p>Construction</p> <ul style="list-style-type: none"> • Procure goods and services, as far as practically possible, from the local municipality • Devise and implement skills training and skills transfer. • Hire majority of local residents who will boost local economy through expenditure that empowers local businesses and economy • Manage recruitment process to control expectations and unnecessary in-migration. • Implement controlled access to project site and monitor activity in immediate surrounding sites. • Set up local community safety forum. • Maintain contact with major community stakeholders. • The construction activities and movement of construction vehicles into the project area should be restricted to certain hours of the day. • Movement of construction vehicles into the project area should be controlled and restricted to certain hours of the day. • Mitigation measures proposed by visual and noise specialists should be strictly adhered to, in order to minimise the probability and intensity of the visual exposure in the area. • If possible, conduct independent appraisals and valuations of affected properties and consider buying these out • Where possible, invest in social amenities for the surrounding neighbourhood • Educate and inform the affected parties on the potential environmental impacts that could ensue and the activities to adequately manage perceptions regarding potential effects of the project on the surrounding land uses. <p>Operational</p> <ul style="list-style-type: none"> • Maximise benefit for local economy through local procurement • Offer skills development programme to serve mining market in the region and create local employability • Skills levels in municipality and for benefitting individuals will improve due to employment created. • Employing locally will increase benefit to local households and

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
	<p>local economy.</p> <ul style="list-style-type: none"> Where possible, invest in own energy generation capabilities <p>Operational</p> <ul style="list-style-type: none"> Employing and procuring services and goods locally will increase benefit to the local economy during decommissioning Engage with employees before closure Generate solution for loss of employment 	<p>inadvertently the local economy.</p> <ul style="list-style-type: none"> Where possible, invest in own energy generation capabilities <p>Operational</p> <ul style="list-style-type: none"> Employing and procuring services and goods locally will increase benefit to the local economy during decommissioning Engage with employees before closure <p>Generate solution for loss of employment</p>
Hydrological Impact Assessment	<p>Construction</p> <ul style="list-style-type: none"> Ensure the site temporary stormwater management plan is in place prior to the construction activities. The temporary stormwater controls must be maintained such that no blockages are present in the channels and containment ditches so as to ensure effective functioning. All infrastructure is to be placed outside of the 1:100-year flood line or 100m buffer of the Sterkstroom River, as well as the 1:100-year flood line of the non-perennial site drainage gully's. River crossing infrastructure must be designed by a Professional Engineer and provision must be made for scour protection at selected infrastructure elements where they encroach on the site drainage gully buffer. <p>Operational</p> <ul style="list-style-type: none"> Ensure the conceptual surface water and storm water management plan developed for the project site is implemented and includes a surface water and stormwater maintenance plan. The maintenance plan is required to ensure that all surface water and stormwater controls function efficiently. The clean and dirty water channels are sized to maximum depth of 1m. The clean water channels are to be grassed triangular channels, whilst the dirty water channels are to be based on concrete lined triangular or trapezoidal channels. The minimum required capacity of the PCD is to be 8,700m³, which is inclusive of a capacity safety margin. The PCD sizing was based on the outcome of site dynamic water balance and complies with GN 704 requirements. A silt trap will be positioned at the entrance to the PCD, to capture fine sediment and hence minimise the rate of dam siltation. <p>Decommissioning & Closure Phase</p>	<p>Construction</p> <ul style="list-style-type: none"> Ensure the site temporary stormwater management plan is in place prior to the construction activities. The temporary stormwater controls must be maintained such that no blockages are present in the channels and containment ditches so as to ensure effective functioning. All infrastructure is to be placed outside of the 1:100-year flood line or 100m buffer of the Sterkstroom River, as well as the 1:100-year flood line of the non-perennial site drainage gully's. River crossing infrastructure must be designed by a Professional Engineer and provision must be made for scour protection at selected infrastructure elements where they encroach on the site drainage gully buffer. <p>Operational</p> <ul style="list-style-type: none"> Ensure the conceptual surface water and storm water management plan developed for the project site is implemented and includes a surface water and stormwater maintenance plan. The maintenance plan is required to ensure that all surface water and stormwater controls function efficiently. The clean and dirty water channels are sized to maximum depth of 1m. The clean water channels are to be grassed triangular channels, whilst the dirty water channels are to be based on concrete lined triangular or trapezoidal channels. The minimum required capacity of the PCD is to be 8,700m³, which is inclusive of a capacity safety margin. The PCD sizing was based on the outcome of site dynamic

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT REFERENCE IN REPORT
	<ul style="list-style-type: none"> Ensure a proper surface water rehabilitation plan is developed. 	<p>water balance and complies with GN 704 requirements. A silt trap will be positioned at the entrance to the PCD, to capture fine sediment and hence minimise the rate of dam siltation.</p> <p>Decommissioning & Closure Phase</p> <p>Ensure a proper surface water rehabilitation plan is developed.</p>
Hydrological Impact Assessment	<ul style="list-style-type: none"> Annual monitoring of the seeps situated in the mountain must be undertaken to determine the potential threats blasting poses towards these seeps. Fixed position photography must be part of these monitoring programmes and must be undertaken in January, to accommodate the wet season. In the event of loss of functionality and a decrease in vegetation (which could be the result of a loss of moisture), a geotechnical assessment must be conducted to investigate the possibility of underground mining activities being the cause of this phenomenon; The geohydrological assessment undertaken for the relevant mining activities (GCS, 2019) must be taken into consideration for the underground mining activities given the fact that the hydrogeological assessment only focusses on the vadose zone; and It is recommended that water accumulating in the adits and underground mining areas be recharged back into the groundwater reserves with special care taken in regard to contamination (i.e. Acid Mine Drainage (AMD)). 	<p>Annual monitoring of the seeps situated in the mountain must be undertaken to determine the potential threats blasting poses towards these seeps.</p>

10.7 Environmental Impact Statement

10.7.1 Summary of the key findings of the environmental impact assessment.

Positive impacts

The Endumeni and Dannhauser area has a high unemployment rate. The proposed mining activity will create numerous positive socio-economic benefits including job creation and procurement of local goods and services and will stimulate the local economy. It is estimated that 25 people will be employed during the construction phase and 225 people will be employed during the operational phase, excluding numerous contractual opportunities, of which approximately 95% will be allocated to the local community.

The stimulation of the national economy will occur as a result of the investment into the mine and proceeding increase in production. The subsequent benefits are employment creation, a rise in consumption levels, new business sales, and a contribution to GDP.

The implementation of an Alien and Invasive Plant Management Plan to on site and in the surrounding Critical Biodiversity Area during operations and post decommissioning can have a net positive impact on biodiversity resources.

Negative impacts

The most significant impacts associated with the project relate to noise generation and visual intrusion of the project which may result in nuisance for receptors in the surrounding area and affect the sense of place of the residents. Other less significant social impacts identified relates to an ingress of people into the area which may result in increased crime and social ills such as substance abuse. The project has the potential impact on property values. The implementation of adequate mitigation will minimise social impacts.

Other impacts relate to biodiversity (disturbance of habitat, spreading of alien invasive species, degradation of sensitive areas etc.), surface and groundwater (hydrocarbon leakages, dewatering, sedimentation), air quality impact (increase in fugitive dust emissions), heritage impacts (destruction of heritage resources), soil (erosion and compaction) as well as wetlands and streams (disturbance, contamination, sedimentation).

The risk pertaining to the groundwater pollution plume which will remain after decommissioning has been rated as high prior to mitigation. The implementation of the mitigation measures will prevent the oxidation minerals

Rehabilitation of the site will have a positive impact in terms of visual appearance, biodiversity and land use.

10.7.2 Final Site Map

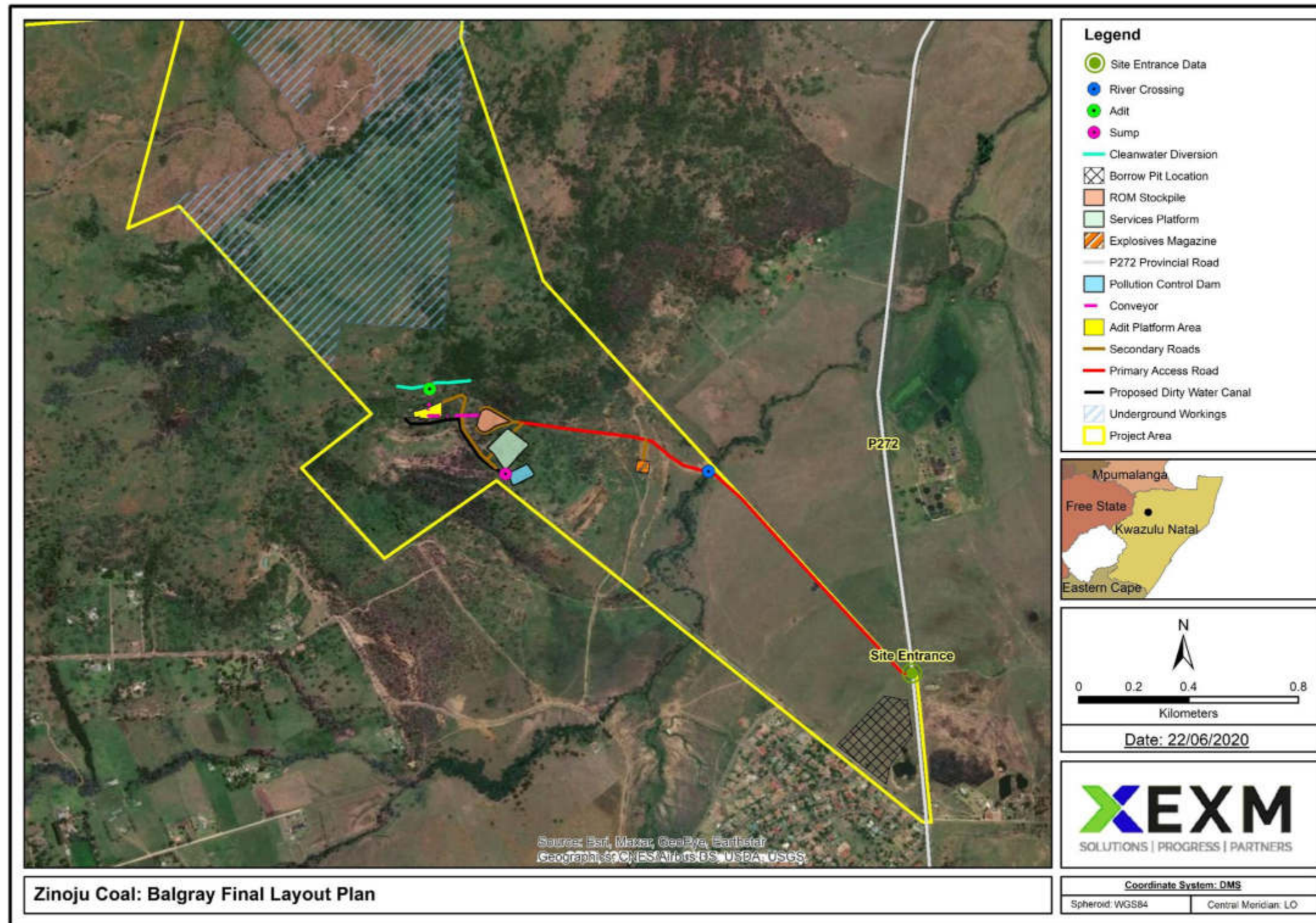


FIGURE 12-1: FINAL SITE LAYOUT PLAN

10.7.3 Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

The key risks related to the project are summarised in the Table below:

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
Construction activities (grading, bulldozing, drilling, vehicles travelling)	Construction	Noise Increase noise levels due to construction activities that may cause nuisance to surrounding receptors/residents (night time)	High	<ul style="list-style-type: none"> Conduct construction drilling activities during the daytime. Minimize night-time traffic and construction activities, as far as possible. Implement a strict speed limit on site. A six-monthly noise monitoring program should be developed and implemented to ensure that the noise levels at the closest NSD are below 45 dBA. Develop a complaints management procedure and register for the site. 	Low
Borrow pit (excavation and vehicles)	Construction	Air Quality Excavation activities and vehicle-entrained dust generated by vehicles driving on unpaved roads	High	<ul style="list-style-type: none"> Removal of vegetation must be avoided until such time as it is required, and exposed surfaces must be stabilised as soon as practically possible. Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants. Enforce strict speed limit, i.e. 30km/h. Conduct baseline Dust Fall Monitoring prior to construction. Conduct Dust Fall Monitoring in terms of the National Dust Control Regulations in relation to all activities, including borrow pit. Implement dust management measures stipulated in the National Dust Control Regulations. Establish 50m buffer zone from the borrow pit to the residential areas. 	Low
Construction activities	Construction	Visual	Moderate	<ul style="list-style-type: none"> Minimum amount of existing vegetation and topsoil should be removed, and natural vegetation should be retained for rehabilitation purposes. 	Moderate

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
<p>Laydown areas.</p> <p>Movement of vehicles</p> <p>Lights.</p> <p>Borrow pit</p>		<p>Residents immediate west of the site. Alteration to the visual quality of aspects of the study area due the removal of vegetation, topsoil and earthworks to create the working platforms.</p> <p>Visual intrusion caused by borrow pit for Dundee resident south of the site.</p>		<ul style="list-style-type: none"> • The construction camp must be positioned in an area less visible from receptors. • The height and extent of the retaining wall(s) associated with the adit (portal area) must be minimised as it is the most visible from sensitive viewing areas west of the site. • The footprint of the earthworks must be minimised and only conducted in demarcated areas. • Cut and fill slopes should mimic the shapes and angles found in the adjacent area; • Establish a vegetated earth berm screen (approximately 3 m high) along the western terrace of the adit (portal) area to screen sensitive views from residences immediately west of the site. • Where new vegetation is proposed to be introduced to the site, an ecological approach to rehabilitation, as opposed to a horticultural approach should be adopted. For example, communities of indigenous plants enhance biodiversity, a desirable outcome for the area. This approach can significantly reduce long term costs as less maintenance would be required over conventional landscaping methods as well as the introduced landscape being more sustainable. • Paint all structures with colours that reflect and compliment the colours of the surrounding landscape. Avoid pure whites and blacks. • Implement dust management measures stipulated in the air quality section. • Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site i.e. lights are to be aimed away from residential areas (south and west of the site) towards the mountain. 	

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
				<ul style="list-style-type: none"> Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on illegal entry to the site. Minimise the number of light fixtures to the bare minimum, including security lighting. Establish 50m buffer from the borrow pit to the residential area. 	
Operational activities (general mine activities, ventilation fan, vehicles and machinery)	Operational	<p>Noise</p> <p>Increase noise levels due to operational activities that may cause nuisance to surrounding receptors/residents (night time)</p>	High	<ul style="list-style-type: none"> Orientate the ventilation fan optimally, not pointing towards any sensitive receptors. If possible, create a berm or barrier between the ventilation shaft and sensitive receptors. The mine can design and implement attenuators within the ventilation fan system to reduce the sound power emission levels of the fan to ensure that noise levels at the closest NSD are less than 45 dBA at night. Minimize all night-time mining traffic as far as possible. Implement a strict speed limit on site. A six-monthly noise monitoring program should be developed and implemented to ensure that the noise levels at the closest NSD are below 45 dBA. Develop a complaints management procedure and register for the site. 	Low
Dust generation. Infrastructure. Lights Movement	Operational	<p>Visual</p> <p>Residents immediate west of the site. Alteration to the visual quality of aspects of the study area due the presence of structures and the movement and haulage of materials on and off the site.</p>	High	<ul style="list-style-type: none"> Implement dust management measures stipulated in the air quality section. Maintain complaints handling procedure. Immediate rehabilitation of disturbed areas after construction has been completed. No trees should be removed that will cause increase visual exposure of the infrastructure on site. Ensure that vegetation that was planted as a visual shield is maintained to ensure optimum growth. Ensure that all lights are directed downwards away from receptors. 	Moderate

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
<p>Loading material from the ROM stockpile onto the trucks using a Conveyor belt (transferring and throw over point)</p>	Operational	<p>Air quality</p> <p>Dust generation – air quality and nuisance conditions</p>	High	<ul style="list-style-type: none"> An irrigation system at the material loading areas can be installed to prevent dust liberation from the operations. Prevent spillage from the conveyor belt by regulating the amount of material and feeding the material to the centre of the belt. The belt should be covered by skirting to prevent wind entrained dust. Coal spillages must be cleaned appropriately. Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants Enforce strict speed limit, i.e. 30km/h. Trucks should be covered to avoid wind blowing the material away and spillage on the road surface. 	Low
Systematic removal of the seam reserve by underground mining methods	Operational	<p>Groundwater</p> <p>Groundwater ingress due to underground mining of coal</p>	Moderate	<ul style="list-style-type: none"> No mitigation Should impacts on boreholes and springs occur an alternative water supply should be provided to the farmers that rely on that water. Water levels of hydro census boreholes within the predicted zone of impact should be monitored frequently to assess effects of dewatering over time. 	Moderate
<p>Local procurement</p> <p>Local employment</p> <p>Skill development</p>	Construction and operational	<ul style="list-style-type: none"> Increase in production and GDP-R due to operation expenditure Employment creation. Skills development 	Moderate positive	<ul style="list-style-type: none"> Maximise benefit for local economy through local procurement Offer skills development programme to serve mining market in the region and create local employability Skills levels in municipality and for benefitting individuals will improve due to employment created. Employing locally will increase benefit to local households and inadvertently the local economy. 	Moderate positive
Vehicles travelling on unpaved roads	Closure	<p>Air quality</p> <p>Dust generation and nuisance conditions</p>	High	<ul style="list-style-type: none"> Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants Vehicles must not exceed 30 km/h 	Moderate

Activities	Phase	Impact	Significance prior to mitigation	Mitigation measures	Significance after mitigation
				<ul style="list-style-type: none"> Limit access to construction site to construction vehicles only 	
Oxidation of minerals	Closure	<p>Groundwater</p> <p>Groundwater contaminant plume generated by the underground workings</p>	High	<ul style="list-style-type: none"> The underground workings must be allowed to flood to prevent oxidation of minerals. Implement measures stipulated in the EMP related to AMD. 	Moderate

10.7.4 Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr

The objectives of impact mitigation and management are to:

- Primarily pre-empt impacts and prevent the realisation of these impacts - **prevention**.
- To ensure activities that are expected to impact on the environment are undertaken and controlled in such a way so as to minimise their impacts – **modify and/or control**.
- To ensure a system is in place for treating and/or rectifying any significant impacts that will occur due to the proposed activity – **remedy**.
- Implement an adequate monitoring programme to:
 - Ensure that mitigation and management measure are effective.
 - Allow quick detection of potential impacts, which in turn will allow for quick response to issue/impacts.
 - Reduce duration of any potential negative impacts.

Environmental impact management outcomes are:

- Minimise the visual appearance of the activities.
- Minimise noise generation.
- Conduct construction activities responsibly to prevent detrimental environmental impacts and ensure operation is compliant with legislative requirements.
- Protect the biophysical environment as far as possible, specifically wetlands and riverine areas and any sensitive areas on and adjacent to the site.
- Protect the groundwater aquifer as far as reasonably possible.
- Prevent social impacts due an influx of people to the area.
- Ensure atmospheric pollution is kept to a minimum.
- Ensure adequate rehabilitation.
- Ensure socially responsible activities.
- Protect heritage resources on site.

10.7.5 Aspects for inclusion as conditions of Authorisation.

- The site must be designed to minimise its visual appearance, i.e. use natural vegetation and topography as a visual shield, paint infrastructure to integrate with landscape, minimise disturbance footprint.
- Adequate noise mitigation must be applied, including i.e. the orientation of the ventilation fan away from receptors, create a berm or barrier between the ventilation shaft and sensitive receptors, conduct construction drilling operations during daytime.
- Implement the stormwater management implementation and maintenance plan according to the specifications of the hydrology specialist study.
- All mitigation as listed in the EMPr must be adhered to.

- Establish 50m buffer from the residential areas to the borrow pit.

10.7.6 Description of any assumptions, uncertainties and gaps in knowledge.

The assessment of the environmental impacts is by nature a very quantitative assessment based on the assessor's experience and knowledge. The assessment also attempts to predict what might likely result in future as a result of the proposed activities.

Due to the minor scale of explosives to be used, a detailed blasting and vibration specialist study was not undertaken as part of the EIA. The assessment of impacts related to vibrations was based on information provided by Zinoju Coal.

Groundwater-specific yield and specific storage values used in the groundwater model were derived from literature ranges for the rock encountered in the study area. It is assumed that specific yield and specific storage values in the model domain is like literature values.

The noise model utilised to predict noise impacts uses uniform environmental factors such as meteorological conditions and ground characteristics. Due to these and other assumptions, modelling generally could be out with as much as +10 dBA, although realistic values ranging from 3 dBA to less than 5 dBA are more common in practice.

The respective specialist studies contained in Section C contain the specific assumptions, uncertainties and gaps in knowledge associated with the study conducted for the proposed project.

The conclusions and recommendations made in this report, especially the impact assessment and proposed management measures have to be routinely checked through monitoring programmes during the construction and operational phases. Management measure to address impact identified through monitoring needs to be adequately managed to address any shortcoming identified during the various phases of the project.

The proposed borrow pit were not included in the scope of work for the specialist studies and therefore the associated aspects and impacts were not assessed by the respective specialists, including i.e. visual, noise, and air quality. However, some of the specialists, including the fauna, flora and wetland studies, covered the areas on which the borrow pit will be established. The assessment of the impacts associated with the borrow pit was conducted with the available information as well as generic impacts associated with borrow pits.

10.7.7 Reasoned opinion as to whether the proposed activity should or should not be authorised

10.7.7.1 Reasons why the activity should be authorised or not.

- The development holds numerous socio-economic benefits (jobs and local procurement) for a community with high unemployment rates.

- The proposed project does not pose detrimental risks that may cause significant environmental damage.
- The site has been disturbed by previous activities and is therefore not sensitive in terms of biodiversity.
- The development does not pose major risk to surface water resources and is situated outside the buffer zones.
- High risks pertaining to noise and visual intrusion can be mitigated to ensure an acceptable residual risk.
- A relatively small area (approximately 10.2 hectares) will be disturbed by the surface infrastructure and the underground operations do not pose significant risks.

The most pertinent risks associated with the facility pertains to noise generation and visual impacts which have been assessed as having a high significance prior to the implementation of mitigation measures. The LOM of the mine is 5-6 years and therefore the impacts are not long term. The implementation of the mitigation measures will reduce risks associated with noise and visual intrusion to acceptable levels. Noise mitigation will include optimal orientation of the ventilation fan, traffic control, monitoring, creation of a noise berm, etc. Measures to mitigate visual intrusion include vegetation screens, limited footprint, dust management measures, rehabilitation of disturbed areas during construction. If proper rehabilitation is conducted upon decommissioning and effective weed control during operations the site could actually be improved post closure and poses an opportunity to minimise long term impacts.

There is no reason why this activity should not be authorised. The risks of the pertaining to the development can easily be mitigated by following the actions stipulated in the EMPs, which will reduce impacts to acceptable levels which will easily recover.

10.7.7.2 Conditions that must be included in the authorisation

Refer to section 12.2.5

10.7.8 Period for which the Environmental Authorisation is required.

The mine will have a production rate of approximately 45 000 tonnes per month (540 000 tonnes per year) with life-of-mine (LoM) estimated at five (5) to six (6) years. The project is expected to commence at the beginning of 2021. Therefore, the LOM is expected to be 2025/2026. It is expected that the borrow pit will only be operational during the construction phase of the Balgray project which will be approximately 11 months.

10.7.9 Undertaking

The applicant representative, Insert name (ID: _____), hereby confirms the undertaking to ensure implementation and compliance with the basic assessment report and

environmental management programme.

10.7.10 Financial Provision

The first year of the quantum calculations (2020) accounts for closure costs associated with the rehabilitation of areas disturbed during the construction phase, that is, in the event of Unplanned Closure. The estimated financial provision required for the rehabilitation and closure of the Balgray Colliery for the year 2020 is **R3 211 438.93 excl. VAT**. A summary of the financial provision estimate associated with the project is included in the table below. Detailed sheets are provided in the Closure Report attached as **Annexure 18**.

Table 12-2: SUMMARY OF THE FINANCIAL PROVISION

Item	Costing (2020)
Rehabilitation of access roads	R1 673 118.23
General surface rehabilitation	R112 767.60
Fencing	R662 206.37
Ground and surface water monitoring	R131 250.75
EFA Monitoring	R57 306.42
Total	R2 636 649.37
Subtotal (1) (weighing factor 2)	R2 768 481.83
Subtotal (2) (Preliminaries and Contingencies included)	R3 211 438.93

10.7.10.1 Explain how the aforesaid amount was derived.

Cognisance has also been given to the Guidelines for Evaluation of the Quantum for Closure Related Financial Provision for a Mine issued by DMR (January 2005). The aim is however to align with the financial provision regulation in terms of NEMA to ensure future compliance and also to incorporate the latest requirements of legislation.

The quantum is a function of the quantity of a specific structure and cost associated with the demolition and rehabilitation thereof. The quantum has been developed using Microsoft Excel as a database and equation tool. The master rates used in the calculation of the 2020 quantum were determined by increasing the original 2005 master rate with annual CPI inflation, year upon year. The consumer price index (CPI) for 2019 was calculated as an average of the CPIs for January -November 2019 (StatsSA 2019). The consumer price index (CPI) for 2020 was calculated as an average of the CPIs for 2010-2019. The project was separated into numerous management areas. Costing calculations referred to the specific rehabilitation actions, areas and type of disturbance that requires rehabilitation.

The bill of quantities (BoQ) has been developed using a geographic information system to quantify area related to specific infrastructure. In addition, the volume estimations are either based details acquired from the mine planners of the project as all final closure liabilities relate to earthworks. The method employed is deemed acceptable for the level of accuracy required for a mine with a life exceeding 5 years and 10 years (70% to 80% as per Regulation).

A rate sheet has been developed and aligned to the specific infrastructure in the BoQ. The rates sheet has been developed using the following datasets:

1. DMR guidelines (2005)
2. Tender and pay rates from contractors that are available
3. Rates from operations recently evaluated by EXM
4. Associations and industry oversight entities average rate sheets

10.7.10.2 Confirm that this amount can be provided for from operating expenditure.

Zinoju Coal will make financial provision for closure by means of a rehabilitation trust, bank guarantee or cash deposit, with any shortfall between the immediate closure cost estimate and the balance in the Trust Account being funded by means of bank guarantees. Annual reviews will be conducted to evaluate the closure costing and to check whether sufficient provision has been made.

10.7.11 Specific Information required by the competent Authority

10.7.11.1 Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998).

None specified thus far.

10.7.12 Other matters required in terms of sections 24(4)(a) and (b) of the Act

Section 24(4)(b)(i) of the Act requires the EAP to conduct an investigation of the potential consequences of impacts of alternatives to the activity on the environment and assessment of the significance of those potential consequences. No alternative sites were considered due to the position of the coal reserve and geological constraints.

13. UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports
- b) the inclusion of comments and inputs from stakeholders and I&APs;
- c) the inclusion of inputs and recommendations from the specialist reports where relevant;
and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by I&AP's are correctly reflected herein.

Signature of the environmental assessment practitioner:

EXM Advisory Services (Pty) Ltd

Name of company:

2020/07/03

Date:

14. REFERENCES

- Agreenco. 2019. Old Balgray Colliery: Air Quality Impact Assessment.
- Agreenco. 2019. Zinoju Coal, Balgray Adit Refurbishment: Baseline Faunal Biodiversity Assessment,
- Agreenco. 2019. Zinoju Coal, Balgray Adit Refurbishment: Baseline Vegetation Biodiversity Assessment
- Aurecon. 2019. Traffic Impact Assessment for the Proposed Recommissioning of the Balgray Adit near Dundee.
- CGS Water and Environmental Consultants. 2019. Hydrogeological Investigation of the Old Balgray Colliery. GCS Ref - 19-0110.
- Confluent Environmental. 2019. Freshwater Assessment for the Proposed Balgray Colliery, Dundee, KwaZulu-Natal.
- Confluent Environmental. 2019. Wetland Assessment for the Proposed Balgray Colliery, Dundee, KwaZulu-Natal
- cPod. 2019. Surface Water Hydrology Report - Balgray Adit Refurbishment Feasibility Study.
- cPod. 2019. Water Balance Report - Balgray Adit Refurbishment Feasibility Study.
- Environmental Acoustic Research. 2019 Noise Study for Environmental Impact Assessment - Development of the Balgray Underground Colliery near Dundee, KwaZulu-Natal Province.
- Newtown Landscape Architects cc. 2019. Visual Impact Assessment for the Proposed Balgray Colliery Project.
- PGS Heritage. 2019. Heritage Impact Assessment for the Proposed Recommissioning of the Old Balgray Colliery Located Near Dundee, Endumeni Local Municipality, Umzinyati District Municipality, Kwazulu-Natal Province.
- PGS Heritage. 2019. Palaeontological Phase 1 Assessment for the Proposed Re-Commission of the Old Balgray Colliery Near Dundee, Kwazulu Natal.
- The Biodiversity Company. 2019. Level 3 Hydrogeological Assessment for the Old Balgray Colliery.
- Urban-Econ Socio-Economic Basic Assessment for the Refurbishment and Recommissioning of the Old Balgray Colliery in Dundee. Kwazulu-Natal Province.

15. ANNEXURES

Annexure A
EAP CV

Curriculum Vitae Trevor Hallatt



Profession: Environmental Consultant

Education: Masters Degree in Environmental Management

Registrations/
Affiliations: South African Council for Natural Scientific Professions
Registration nr: 300123/15

Experience 9 years

ID number: 8706245033083

Contact nr: +27 82 674 1392

E-mail address twhallatt@gmail.com

Specialisation: Environmental Impact Assessments; Environmental Management Programmes; Waste Licence Applications; Water Use Licence Applications; Atmospheric Emissions Licence Applications; Environmental Legal Auditing; Environmental Management System Implementation and Audits.

1. Expertise

Trevor Hallatt has been involved in the field of environmental management for the past 9 years. His expertise includes:

- Environmental Impact Assessment, including full EIA and Scoping as well as Basic Assessments;
 - Generation of Environmental Management Programmes;
 - Water Use Licence Applications, Waste Management Licence Applications and Atmospheric Emissions Licence Applications;
 - Legal Compliance Management and Environmental Control Officer related duties;
 - Auditing of Environmental Authorisations;
 - Working Experience in Geographical Information Systems;
 - Environmental Management System (ISO 14001) Audits and Implementation;
 - Environmental Risk Assessment;
 - Public and government consultation; and
 - Short course development and presentation.
-

2. Employment Record

- 2015 – present

Zarbow Environmental Consulting Services (Senior Environmental Consultant)

- 2010 – 2014

Centre for Environmental Management (North-West University) (Junior Environmental Consultant)

3. Education

- BSc Degree in Geography, Zoology and Tourism
- Honours degree in Environmental Management (obtained best student award)
- Masters Degree in Environmental Management (Distinction)
- Short courses: (Risk Assessment, Environmental Control Officer – MS Auditing, Environmental Legislation, Rehabilitation)

4. Publications:

HALLATT, T.W., KILBING, J.P. and SANDHAM, L.A. (1999) The Quality of Biodiversity Inputs to EIA in Areas with High Biodiversity Value — Experience from the Cape Floristic Region (South Africa). *Journal of Environmental Assessment, Policy and Management (JEAPM)*, 2013; 17(2): 1-20

5. Experience

5.1 Environmental Assessment Practitioner

Acted as Environmental Assessment Practitioner (EAP) for the legal processes to obtain Environmental Authorisations for the following projects:

- Vereeniging Refractories Elgin Operations Waste Management Licence;
- Vereeniging Refractories Hammanskop Waste Management Licence and ERF amendment;
- ArcelorMittal full EIA and Scoping as well as EMR for the decommissioning of the existing Metallurgical Disposal Site and the Construction of a New Class 3 Disposal Site;
- Pinnacle Metals Waste Management and AE Application;
- Buraloth Expansion Project Basic Impact Assessment Process;
- Leratouwa Ceramics Atmospheric Emissions Licence and full EIA;
- Ceramic Industries Warehouse Development Basic Impact Assessment;
- Ceramic Industries Phoenix Factory Atmospheric Emissions Licence and full EIA;
- ArcelorMittal Vanderbijlpark Galvanising Line Conversion to Combustion Basic Impact Assessment;
- Universal Oil Solutions Waste Management Licence Application;
- Review of Various Mining Finespreading Basic Assessment Applications;
- N. MA Section 243 Applications for the Coal Energy Trading Reception and Dispatch Sites;
- Basic Assessment for the Development of a Coal Sliding near Bronkhorstspruit;
- Full EIA for a Photovoltaic Solar facility near Middelburg, Eastern Cape;
- Involved in 15 Waste Management Licence applications for landfill sites across the North West Province;
- Involved in the Atmospheric Emissions Licence Application and full EIA for a Medical Waste Incinerator in Waitoa, Pretoria;
- Columbus Stainless Basic Assessment for the Storage of Hazardous Substances (current) and
- SA Tank Terminals Waste Management Licence Application.

5.2 Water Use Licence Applications

- Ceramic Industries Phoenix, Siama and Geyronn factories (respective);
- Cape Gate Vanderbijlpark; and
- Deming Southern Africa (current).

5.3 Environmental Compliance Auditing

Conducted audits to assess compliance to a variety of Environmental Authorisations for the following organisations:

- ArcelorMittal Vanderbijlpark, Vereeniging and New Castle;
- Af Sam Vanderbijlpark,
- Kemmin Refractories in Veyerton;
- Cape Gate;
- Burnaloch;
- Future Coal
- Mooiriver Mill in Potchefstroom; and
- North-West University

5.3 Environmental Management System (EMS) Auditing and Implementation

Conducted EMS audits in terms of ISO 14001:2015 for the following organisations:

- Af Sam Vanderbijlpark and Roodkop
- Camden and Tuluks Power Stations, and
- M Leo Vanderbijlpark

Involved in EMS implementation projects for the following organisations:

- Sishen Iron Ore Mine
- Af Sam Vanderbijlpark and Roodkop (new ISO 14001:2015 standard); and
- Ceramic Industries Vereeniging.

5.4 Environmental Risk Assessment

- Assistance with closing out of risk impact aspect related findings (Camden Power Station)
- SHERQ risk register review and rectification for Asemang - Beeshoek Iron Ore Mine
- Environmental Risk Assessment in the Banking Sector (ABSA)
- Assisted in chemical risk assessments for Sishen Iron Mine and Koffstroom Diamond Mine

5.5 Short Course Development and Delivery

Development of course material (presentations, programmes, course information sheets etc.) for various environmental management short courses and dates included the following:

- Acted as technical coordinator for short courses; and
- Presented on various topics at short courses including:
 - o Biodiversity and hazardous substance management
 - o EMS and environmental risk assessment
 - o Corporate governance
 - o Environmental management tools

5.6 Geographical Information Systems

- Utilisation of ArcMap software to generate maps for IMA processes;
- Google Earth Pro
- GIS database management.

Annexure B – Public Participation

Annexure B1

I&AP list

Name and surname	Organisation/Farm and portion	Designation	Tel	Fax	Cell	Email	Address	Notification method
EDUMENI MUNICIPALITY (Nic Bezuidenhoud or Bonginkosi Hlatshwayo)	Farm Craigside 2272 ptn 72, ptn 119, ptn 120, ptn 128	Chief Estates Officer				[REDACTED]		Email
ROBERT HEINRICH LAWRENCE	Farm Craigside 2272 ptn 73				[REDACTED]	[REDACTED]		Email and SMS
ESKOM FINANCE CO PTY LTD	Farm Craigside 2272 ptn 115				[REDACTED]			
IDO SCHROEDER	Farm Impati Heights 9950 ptn 0, Farm Morgenstond 3347 ptn 0, ptn 1		034 212 3726			[REDACTED]		Email
WILLIE BRITS MAREE	Farm Kelvin Grove 4474 ptn 1, Farm Kelvin Grove 8485 ptn 1		034 212 5991 '0342121258		[REDACTED]	[REDACTED]		Email and SMS
DOUGLAS EDMOND JOHNSTONE	Farm Kelvin Grove 4474 ptn 3, ptn 5, Farm Woodlands 8485 ptn 0		034 212 1034 '0342123794		[REDACTED]	[REDACTED]		Email and SMS
ANTON FERREIRA	Farm Kelvin Grove 8485 ptn 0, Farm Woodlands 8485 ptn 2				[REDACTED]	[REDACTED]	[REDACTED]	Email and SMS
COENRAAD TORLAGE	Farm Morgenstond 3347 ptn 3				[REDACTED]	[REDACTED]		Email and SMS
SUSARA JOHANNA SUSANNA JOUBERT	Farm Seelandkop 16199 ptn 0		0342121258, 0342182292		[REDACTED]	[REDACTED]	[REDACTED]	Email and SMS
ELIZABETH VIOLET PICKETT	Farm Woodlands 8485 ptn 4				[REDACTED]	[REDACTED]	[REDACTED]	Email and SMS
THE LONG FAMILY TRUST	Farm Woodlands 8485 ptn 5							
Interested parties								
Shaun De jager	LAYNSAAN/CLIPSHAM	Landowner	034 212 3674			[REDACTED]		
Stean Jacobs	Avoca Farm	Landowner			[REDACTED]	[REDACTED]		Email and SMS
Edgar Rudolph Torlage	Morrstein(Forfar 4473)	Landowner			[REDACTED]	[REDACTED]		Email and SMS

Name and surname	Organisation/Farm and portion	Designation	Tel	Fax	Cell	Email	Address	Notification method
Caroline Jacobe	Craigside 2272 Ptn 72	Landowner			████████			
A.K Goettsch	'Wild Dust Vlei'farming woodland portion 5	Landowner			████████		██████████	
J Ferreira	St Georges	Landowner			████████		██████████	
L Shawe	Davelsfontein	Landowner			████████	████████████████	██████████	Email and SMS
G Comins	St Cuthbert	Landowner			████████		██████████	
Attie de Lange	5 Catterall street, Craigieburn	Landowner			████████	████████████████		Email and SMS
Marc	35 McPhail Drive	Landowner			████████	████████████		Email and SMS
J.S Potgieter	Oppie Koppie	Landowner			████████	██████████		Email and SMS
AB Potgieter	Oppie Koppie	Landowner			████████	██████████		Email and SMS
J.J. Human	Mc Phail 31 Craigieburn	Landowner			████████	████████████		Email and SMS
S. Bongiseni	Mc Phail 30	Landowner			████████	████████████████		Email and SMS
D. de Wet	Mc Phail 28	Landowner			████████			
N.C. Kunene	Mc Phail 36	Landowner						
Ruth Kassier	Mc Phail 41	Landowner			████████	████████████		Email and SMS
M.E. Olivier	1 Catterall	Landowner			████████			
JURGEN WILHELM WICHMANN		Landowner	0342122121		████████			
PETRUS JACOBUS GUNTER		Landowner	'034 212 3651		████████	████████████████		Email and SMS
Sibuyelo Mthembu		Craigside Community Interested party			████████		██████████	
Farzanah Manjoo					████████	████████████████████		Email and SMS
Fahrana Rotol		Landowner			████████	████████████████		
Wendy Abraham		Landowner			████████	████████████████		Email and SMS
Conradie Van Zyl		Landowner			████████			
Andrea Erwee		Landowner			████████			

Name and surname	Organisation/Farm and portion	Designation	Tel	Fax	Cell	Email	Address	Notification method
Clive Mordaunt		Landowner			████████	████████████████		Email and SMS
H.L Mordaunt		Landowner			████████	████████████		Email and SMS
Riaan Kruger		Landowner			██████	████████████		Email and SMS
L. Wiegman		Landowner			████████		██████████	
H. Shabangu		Landowner			████████	████████████		Email and SMS
L. Khambule		Landowner				████████████		
J.S. Craven		Landowner			████████			
S.R. Ramdharie		Landowner			████████			
Mandla Buthelezi		Landowner			████████			
Ndumiso Dlamini		Landowner			████████	████████████		Email and SMS
G.S. Zungu		Landowner			████████			
Arlene Jacobs		Landowner			████████			
Hetta		Landowner			████████	████████████		Email and SMS
Carien Catlett		Landowner			████████	████████████		Email and SMS
Johann van der Merwe		Landowner			████████	████████████████		Email and SMS
Shane Simmons		Landowner			████████	████████████		Email and SMS
Jody Mitchell		Landowner			████████	████████████		Email and SMS
Sisho Ndaba		Landowner			████████			
Basana Zulu		Landowner			████████			
B. Kelbrick		Landowner			████████			
Radley		Landowner			████████			
MN Buthelezi		Landowner			████████			
EN Sibaya		Landowner			████████			
Gift Edward		Landowner			████████			
Simon		Landowner			██████			
Bheki Ztha		Landowner			████████	████████████		Email and SMS
M.Z Buthelezi		Landowner			████████			
Z Kunene		Landowner			████████			
H.F Mbatha		Landowner			████████	████████████		Email and SMS
Rodwa P.N Hlongwane		Landowner			████████			

Name and surname	Organisation/Farm and portion	Designation	Tel	Fax	Cell	Email	Address	Notification method
Samke Majola		Landowner						
Jabu Zungu		Landowner						
Pinky								
Florens								
Faithela								
Nonhlanhla Dlamini		Landowner						
Ndumiso Dlamini		Insterested party						
Louis Steenkamp		Landowner						
Pam McFadden								Email
Authorities								
Mr Jeffrey Maivha	Department of Agriculture, Forestry and Fisheries (DAFF)	Communication Services	033 392 733	033 343 8278				Email
Ms. T Sibozana	Department of Agriculture, Forestry and Fisheries (DAFF)	Senior Forester	033 392 733	033 392 7700				Email
Mr Rob Crankshaw	KZN Conservancies	Representatives						Email and SMS
Mrs B Mlambo	SANRAL/NRA	Enviromental Coordinator at SANRAL	033 392 8100	012 362 2116				Email
Mr Siphwe Mkhize	Kwazulu Department- Department of Agriculture and Rural Development	Head of Department Kwazulu Natal	033 355 9108	033 343 8278				Email and SMS
Mrs Lizzane Rungasamy	Comission on restitution on Land Rights	Head Office : Deputy Commissioner	051 430 0444	051 430 3930				Email
Mr Bheki Mbili	Comission on restitution on Land Rights	Chief Director	033 341 2600	033 842 0409				Email
Mr Karoon Moodley	Department of Mineral Resources	Regional Manager Mineral Regulation	031 335 9600	031 301 6950				Email
Mr FC Bester	Endumeni Rates Payer Association		034 212 1815					Email and SMS

Name and surname	Organisation/Farm and portion	Designation	Tel	Fax	Cell	Email	Address	Notification method
Mr Gerald Willis Smith	DAEARD	Assessing Officer				[REDACTED]		Email
Collen Moonsamy	DWA	Assistant Director	031 336 2846		[REDACTED]	[REDACTED]		Email and SMS
Mrs Sharmain Moodley	Umzinyathi Municipality	Environmental health Practitioner	034 219 1554		[REDACTED]	[REDACTED]		Email and SMS
Dominic Weiners	EKZNW		033 845 144			[REDACTED]	[REDACTED]	Email
Weziwe Tshabalala	Amafo	Senior Admin Officer	033 394 6543			[REDACTED]	[REDACTED]	Email
Mboneni Nene	Dannhauser Local Municipality	Technical Director	034 621 2666		[REDACTED]	[REDACTED]	[REDACTED]	Email and SMS
Nothile Mthimkhulu	Amajuba District Municipality	Open Developer	034 329 7323		[REDACTED]	[REDACTED]		Email and SMS
Mr Peter Woolf	Department of Human Settlement	Senior Manager	031 336 5145		[REDACTED]	[REDACTED]	[REDACTED]	Email and SMS
Mr Stanley Ngobese	KwaZulu Natal Department of Human Settlements	Acting Director: Umzinyati District				[REDACTED]		Email
Mr Musa Mntambo	Ezemvelo KZN Wildlife	Manager Communication Services	033 845 1743			[REDACTED]		Email
Mr Ashley Starkey	Department of Water and Sanitation (DWS)	Chief Director	031 336 2700	031 336 2849	[REDACTED]	[REDACTED]	[REDACTED]	Email and SMS
Mr Bongani Mdluli	Department of Water and Sanitation (DWS)		031 336 2894			[REDACTED]		Email
Ms Puleng Selela	Department of Water and Sanitation (DWS)		031 336 2894			[REDACTED]		Email
Shezi	KZN Department of Agriculture and Environmental Affairs	Acting Head of Department				[REDACTED]		Email

Name and surname	Organisation/Farm and portion	Designation	Tel	Fax	Cell	Email	Address	Notification method
Mrs Vanessa Maclou	KZN Department of Agriculture and Environmental Affairs					[REDACTED]		Email
Mr Ntokozo Gumede	KZN Department of Agriculture and Environmental Affairs	Acting District Director: UMzinyathi District				[REDACTED]		Email
Pawanbiwa	AMAFA KZN SAHRA					[REDACTED]		Email
Pawanbiwa	SAHRA National					[REDACTED]		Email
Sithebe	Department of Transport	Provincial EPWP Coordinator				[REDACTED]		Email
Ms Buhle Mzulwini	Department of Agriculture, Forestry and Fisheries (DAFF)		033 392 7744	086 514 7600		[REDACTED]		Email
Mr Musa Mntambo	Ezemvelo KZN Wildlife	Manager Communication Services	033 845 1743			[REDACTED]		Email
Mr Jerry Mfusi	Department of Economic development ,Tourism and Environmental Affairs	Acting Head of Department	033 264 2504/033 355 9108	033 355 9293	[REDACTED]	[REDACTED]	[REDACTED]	Email and SMS
Mr Bhekumuzi Mathenjwa	Department of Economic development ,Tourism and Environmental Affairs	Director Environmental Management				[REDACTED]		Email
Ms Sizile Mthlane	Department of Rural Development & Land Reform	Deputy Director: Rural Enterprise Infrastructure Development (REID)	033 355 3383			[REDACTED]		Email
Mr Sam Mothilal	Department of Transport	Cost Centre Manager	034 328 4000	034 328 4010		[REDACTED]	[REDACTED]	Email

Name and surname	Organisation/Farm and portion	Designation	Tel	Fax	Cell	Email	Address	Notification method
Mr Thulani Zungu	Department of Rural Development & Land Reform	Deputy Director	034 312 8460	034 312 7337	████████	████████████████████	██████████	Email and SMS
Mr Rodney Harrylal	Transnet	Key account Executive	031 361 2404	031 361 2075	████████	████████████████████		Email and SMS
Mrs TBT Sakyi	Department of Health	CEO	034 328 0048	034 328 0022		████████████████████	██████████	Email
Mr Andre Evetts	KZN Department of cooperative governance and traditional affairs	Infrastructure Development				████████████████████		Email
Ms Barbara Mgutshino	KZN Department of cooperative governance and traditional affairs	Development and Planning				████████████████████		Email
Municipalities & Traditional Council								
Mrs S.M Zulu	Madadeni area	Traditional councilor			████████			SMS
Mr S.A Malinga	Madadeni area	Traditional councilor			████████			SMS
Mr Z Mndaweni	Endumeni Local Municipality	Waste Management			████████			SMS
Mrs Nokwanda Nthethwa	Endumeni Local Municipality	Environmental Department			████████	████████████████████		Email
Mr Mtembu	Umzinyathi Municipality	Water Department			████████	████████████████████		Email
ClIr T.I Makaba	Madadeni H	Ward councilor ward 6			████████	████████████████████		Email and SMS
Mr SR Mbatha	Endumeni Local Municipality	Mayor				████████████████████		Email
	Endumeni Local Municipality	Planning Department				████████████████████		Email
Ms NS Shabalala	Endumeni Local Municipality	Mayor PA				████████████████████		Email
Ms LB Mpontshane	Endumeni Local Municipality	Munical Manager				████████████████████		Email
Ms S Madela	Endumeni Local Municipality	Munical Manager PA				████████████████████		Email
Mrs Nokwanda Nthethwa	Endumeni Local Municipality	Environmental Department		034 393 1121		████████████████████		Email
Mr Mtembu	Umzinyathi Municipality	Water Department		034 219 1514		████████████████████		Email

Name and surname	Organisation/Farm and portion	Designation	Tel	Fax	Cell	Email	Address	Notification method
Sharmain Moodley	Umzinyathi Municipality	Environmental health Practitioner	034 219 1554		████████	████████████████████	████████████████████	Email and SMS
Ms James Mthethwa	Umzinyathi District Municipality	Mayor			████████	████████████████████	████████████████████	Email
Ms Thami Malunga	Umzinyathi District Municipality	Municipal Manager			████████	████████████████████	████████████████████	Email

Annexure B2

Copy of BID

ZINOJU COAL (PTY) LTD**ATTENTION: INTERESTED AND/OR AFFECTED PARTY****NOTICE OF THE ENVIRONMENTAL APPROVAL PROCESSES****OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT DUNDEE, KWAZULU- NATAL****1. Introduction**

Notice is hereby given that Zinoju Coal (Pty) Ltd intends to refurbish and recommission the old Balgray Colliery located within the existing Aviemore Mining Right Area (Ref: KZN 30/5/1/2/2/301 MR). The recommissioned Balgray Colliery and proposed surface infrastructure will be located on the remaining extent of Portion 71, Portion 93 and Portion 116 of the Farm Craigside 2272 GT. The extent of the proposed underground coal extraction as part of the project will affect the remaining extent of the farm Stony Braes No. 4475 GT as well as the remaining extent and portions 2 & 3 of the farm Impati 10260 GT. These farms are located approximately 1.7 km north-west of the Dundee town's northern suburbs, KwaZulu-Natal Province (refer to Figure 1).

Application is being sought for authorisation in terms of the following:

1. Section 102 of the Minerals and Petroleum Resources Development Act, 2002 for the amendment of the existing Buffalo Coal (Pty) Ltd: Aviemore Mine Environmental Management Programme (EMPr), as amended to include the activities relating to the recommissioning of the old Balgray Colliery.
2. Application for authorisation for activities 14, 24, 27, and 34 triggered in terms of listing Notice 1 (GNR. 983 of 2014) and activities 4 and 12 triggered in listing Notice 3 (GNR. 985 of 2014) which required environmental authorisation in terms of National Environmental Management Act, 1998 (Act No 107 of 1998). The application is to be supported by a Basic Assessment process in terms of Regulation 19 of the Environmental Impact Assessment Regulations (GN R982 of 2014, as amended by GN R326 of 2017); and
3. An application for an Integrated Water Use Licence (IWULA) in terms of section 40 of the National Water Act, 1998 (Act No. 36 of 1998) (NWA) for proposed project. The proposed project will undertake new water uses as defined in terms of Section 21 (c); (g); (i); and (j) of the NWA. The application will be made in terms of the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GN R267 of 2017).

This letter serves to **notify you as a landowner, lawful occupier, interested or affected party of the environmental approval processes that is being sought**. EXM Advisory Services (Pty) Ltd has been appointed as the Independent Environmental Assessment Practitioners responsible for administering the abovementioned applications for authorisation.

PURPOSE:

This document serves to:

- Notify you of the applications for authorisation.
- Describe the application processes.
- Inform you as to how you can provide input into the process.

YOUR ROLE:

As an interested and affected party, your role is to:

- Ask questions, raise issues and concerns.
- Attend public meetings.
- Review and provide comment on environmental reports

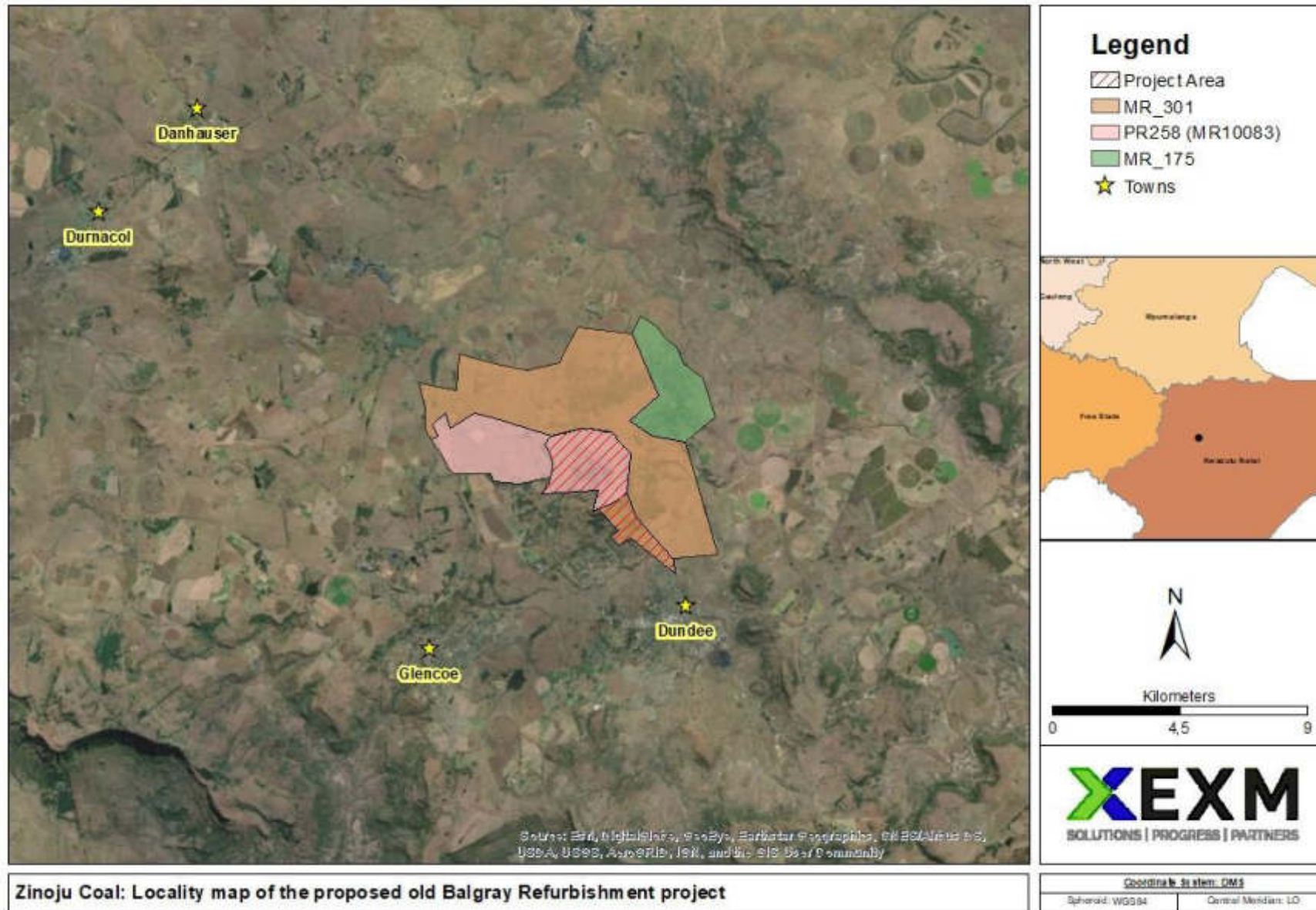


FIGURE 1: GENERAL LOCATION OF OLD BALGRAY COLLIERY - ADIT RECOMMISSIONING PROJECT

2. Preliminary Overview of the of the proposed Refurbishment of the Old Balgray Colliery Adit

2.1 Property Details

The recommissioned Balgray Colliery and proposed surface infrastructure will be located on the remaining extent of Portion 71, Portion 93 and Portion 116 of the Farm Craigside 2272 GT. The extent of the proposed underground coal extraction as part of the piroject will affect the remaining extent of the farm Stony Braes No. 4475 GT as well as the remaining extent and portions 2 & 3 of the Farm Impati 10260 GT.

The closest residential centre to the colliery is the town of Dundee, with the Balgray coal reserve located approximately 1.7 km north-west of the town's northern suburbs. The underground workings fall over two mining right areas namely the Aviemore MR301 and Aviemore PR258 (MR10083MR), the latter is pending execution by the Department of Mineral resources (DMR).

2.1 Mining, Coal Processing, Materials Handling and Associated Infrastructure

The proposed colliery plans to target the Gus Coal Seam which has an estimated anthracite coal reserve of 2.6 million tonnes, and once refurbished, the mine will have a production rate of approximately 45 000 tonnes per month with life-of-mine (LoM) estimated at five (5) years. A conventional drill-and-blast mining method will be used for underground coal extraction.

The old Balgray Adit, which is planned to be used for access to the underground workings, ventilation and coal extraction, is located on the steep southern slopes of the Impati Mountain. The adit has been sealed and the site is considered "partially" rehabilitated. Therefore, the adit and portals will be refurbished, and new surface infrastructure will be developed as part of the recommissioning of the mine. An adit conveyor will be used to transfer mined coal to a run-or-mine (ROM) stockpile, from where it will be loaded onto road going haul trucks for distribution to the existing Coalfields Coal Processing Plant, located to the east of Dundee. No coal processing will take place on site.

Supporting infrastructure includes the construction of a service platform to support maintenance buildings and facilities, bulk service infrastructure, operations support buildings and general logistics management areas. An access and/or haul road will connect the mine with the P727 provincial road leading into the town of Dundee. This road will cross the Sterkstroom River along its proposed route, requiring the construction of a river crossing structure. Mining will require dewatering. Water from the underground workings will be used for dust suppression during underground workings as well as surface dust suppression of the roads and materials handling areas. Excess underground water will be discharged to the PCD (if required). Mine residue will be disposed of at Magdalena Mine Discard Dump and fine coal slurry will be disposed of in existing slurry paddock facilities at the Coalfields Processing Plant and transported to Magdalena Mine Discard Dump. Both the latter being offsite facilities and not part of the project. An existing historic discard dump was constructed down-gradient of the adit portal during the early years of operation. This discard dump is, however, owned by the landowner (not Zinoju Coal) and will not form part of the Zinoju Coal's proposed Balgray

operations.

2.2 Stormwater Management Infrastructure

- Adit and Service Platform

As part of the refurbishing of the adit, a sump will be constructed down-slope of the adit, which will collect dirty storm water run-off from the adit and portals zone, as well as groundwater pumped from the underground workings. Water will be gravitated from the sump to a PCD. This PCD will also manage dirty water from the services platform. Dirty water run-off from the existing discard dump is intercepted by an existing dirty water channel that gravitates the collected water to existing evaporation ponds located to the south-east.

- Gravel Roads and Haul Roads

General storm water management infrastructure, such as culverts, vee-drains and berms will be used along the proposed roads. Safety barriers and storm water berms will also be provided along selected areas of roads at the adit.

2.3 Water-related Services

Potable water will be trucked-in from Dundee. Sewage will be managed via the operation of conservancy or septic tanks on site.

A concept level mine layout plan of the Balgray Colliery is given in Figure 2.

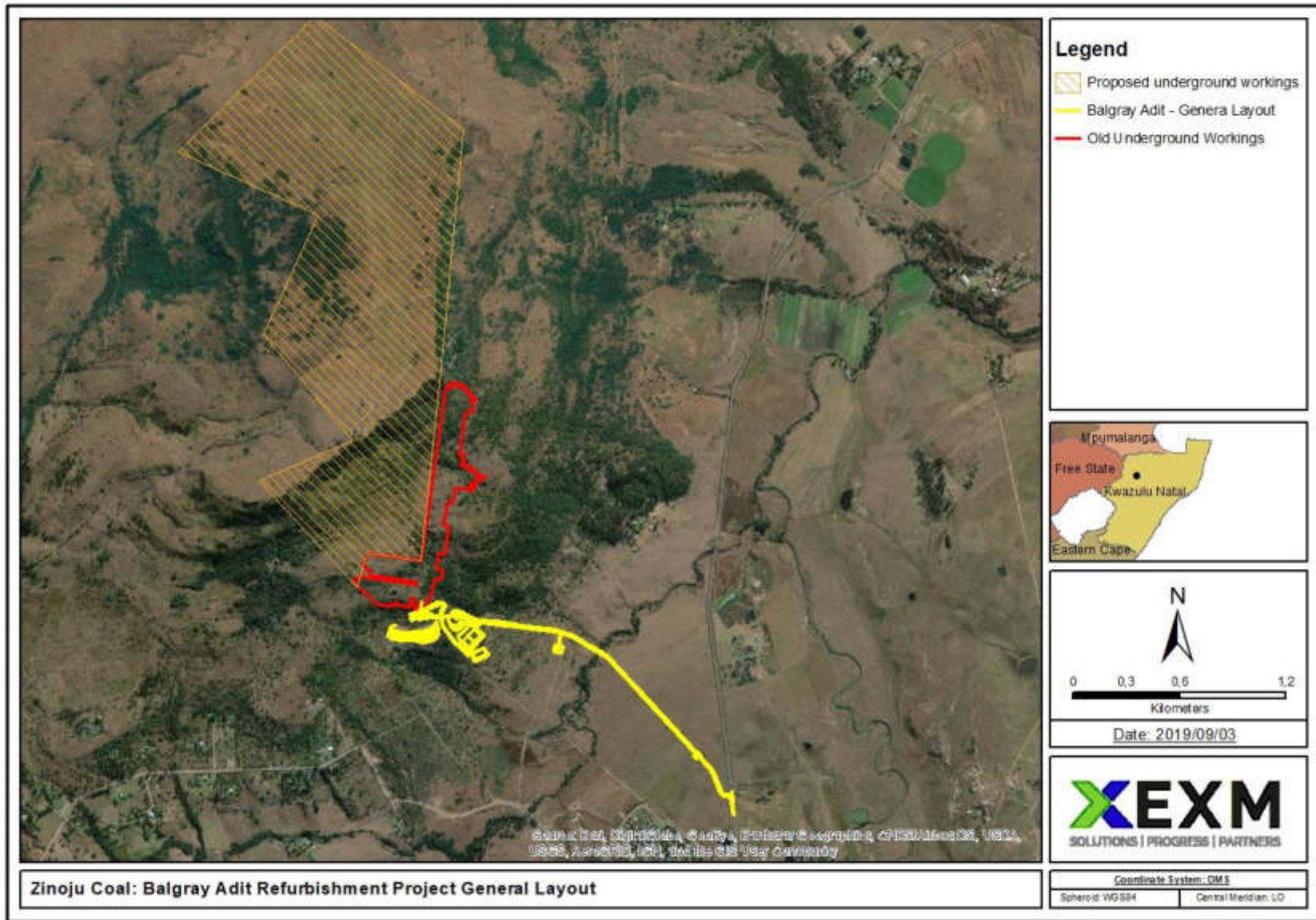


FIGURE 2: CONCEPTUAL LAYOUT PLAN OF THE PROPOSED PROJECT

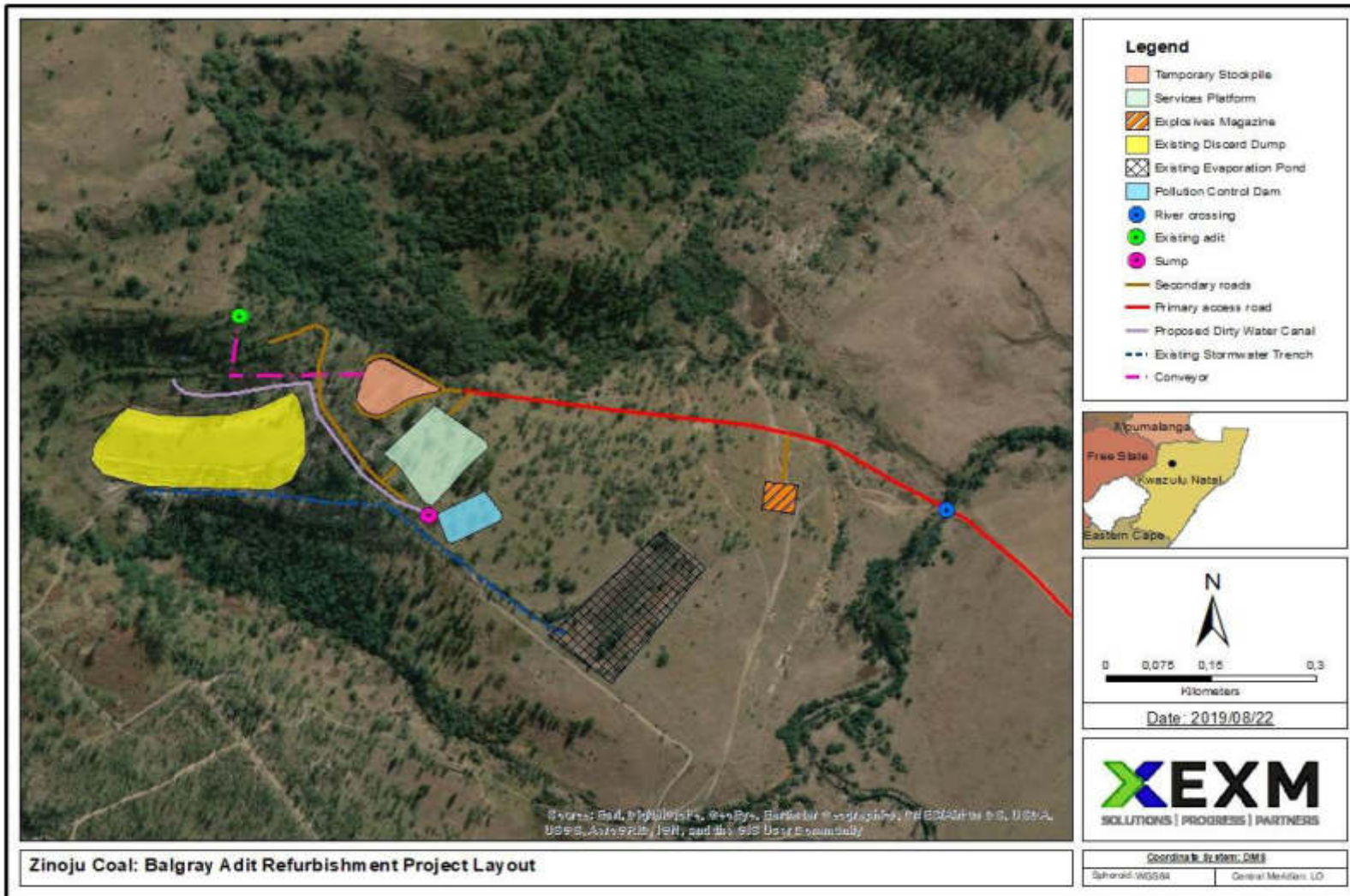


FIGURE 3: CONCEPTUAL LAYOUT PLAN OF THE PROPOSED PROJECT

3. Environmental Approvals Required

3.1 Minerals & Petroleum Resources Development Act (No. 28 of 2008) (MPRDA)

The Old Balgray Adit is located within the Aviemore Mining Right Area (DMR Ref: KZN 30/5/1/2/2/301 MR). The proposed surface infrastructure will also be located within the mining right area. However, some of the Balgray coal reserves fall outside the Aviemore mining right area (301 MR) under a separate prospecting right area (PR258) which is currently undergoing final adjudication to be granted a mining right (MR10083) – i.e. Aviemore North.

The Aviemore Colliery (Phase 1) Environmental Impact Assessment (EIA); including the Environmental Management Programme (EMPr) was approved under Section 39 of the MPRDA on 20th June 2013 (DMR Ref: KZN30/5/1/2/3/2/1/301EM)). Despite the Section in the MPRDA being repealed; all future environmental authorisations are regulated under National Environmental Management Act, 1998 (Act No. 108 of 1998) (NEMA); existing authorisations in terms of the MPRDA remain valid. However, the planned activities for the Balgray Adit Refurbishment Project are not currently approved in the Aviemore EIA/EMPr and will, therefore, require amendment in terms of Section 102 of the MPRDA to include management of proposed activities at the recommissioned Balgray Adit and proposed surface infrastructure.

3.2 National Environmental Management Act (No. 107 of 1998) (NEMA)

The proposed surface infrastructure associated with the refurbishment and recommissioning of the Balgray Adit involves clearance of indigenous vegetation, expansion of existing infrastructure and the development of access roads. Certain listed activities are triggered in terms of Listing Notice 1 (GN R. 983 of 2014) and Listing Notice 3 (GNR. 985 of 2014) published in terms NEMA.

The listed activities triggered in terms of these notices is provided in Table 1. Activities triggered in terms of Listing notice 1 and 3 require an environmental authorisation which needs to be supported by a basic assessment process under the NEMA EIA regulations (GNR. 982 of 2014, as amended). According to the EIA Regulations, the competent authority for submission of the application for environmental authorisation is the Minister responsible for mineral resources i.e. submission to the Department of Mineral Resources (DMR). The regulated timeframes for the completion of a basic assessment process, as provided in the EIA Regulations, are provided in Figure 3.

Table 1: NEMA Listed Activities triggered by the Project

Applicable Regulation	Project Infrastructure triggering the Listed Activity
<u>Listing Notice 1 (GN R. 327 of 2017)</u>	
Activity 14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.
Activity 24	The development of a road – i. "..."; or ii. with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 meters; but excluding a road – a) which is identified and included in activity 27 in Listing Notice 2 of 2014; b) where the entire road falls within an urban area; or c) which is 1 kilometre or shorter.
Activity 27	The clearance of an area of 1 hectare or more , but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for – i. the undertaking of a linear activity; or ii. maintenance purposes undertaken in accordance with a maintenance management plan.
Activity 34	The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution, excluding – i. where the facility, infrastructure, process or activity is 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 National Environmental Management: Waste Act, 2008 applies; ii. the expansion of existing facilities or infrastructure for the treatment of effluent,
	Development of an explosives magazine to supply material for blasting.
	The construction of the access road between the adit area and the P727 provincial road. The road will be longer than 1 km and wider than 8 m.
	The proposed activities associated with the project will result in the clearance of more than one (1) hectare indigenous vegetation for construction of required infrastructure
	The proposed project requires authorisation in terms of Section 40 of the National Water Act for Section 21(g) water uses. A separate water use licence will, therefore, need to be applied for, thus triggering the listed activity.

Applicable Regulation		Project Infrastructure triggering the Listed Activity
	<p>wastewater, polluted water or sewage where the capacity will be increased by less than 15 000 cubic metres per day; or</p> <p>iii. the expansion is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will be increased by 50 cubic meters or less per day.</p>	
<u>Listing Notice 3 (GN R. 985 of 2014)</u>		
Activity 4	<p>The development of a road wider than 4 meters with a reserve less than 13.5 meters:</p> <p>d. KwaZulu-Natal</p> <p>(viii) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.</p>	<p>According to the 2014 KZN Biodiversity Sector Plan of SANBI a section of the project falls within a Critical Biodiversity Area (CBA), defined as irreplaceable.</p> <p>The secondary access roads will be developed within the CBA.</p>
Activity 12	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan</p> <p>d. KwaZulu-Natal</p> <p>(viii) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p>	<p>According to the 2014 KZN Biodiversity Sector Plan of SANBI a section of the project falls within a Critical Biodiversity Area (CBA), defined as irreplaceable.</p> <p>Development of infrastructure will require clearance of vegetation within the reaches of the CBA.</p>

3.3 National Water Act (No. 36 of 1998) (NWA)

The proposed development will include water uses as defined in terms of Section 21 of the National Water Act (Act 36 of 1998). These proposed water uses are provided in Table 2 below.

Table 2: Section 21 water uses to be included in the IWULA

Water Use	Activity Description
Section 21 (a)	Abstraction of groundwater
Section 21 (c&i)	New water course crossing over the Sterkstroom River
	Existing/new infrastructure within 500 m regulated zone of a wetland/watercourse (specific infrastructure to include in the IWUL application will be confirmed after review of specialist findings)
Section 21 (g)	Construction of a new Pollution Control Dam (PCD)
	Temporary Product Stockpiles
	Underground dust suppression (associated with the Section 21 (j) application)
	Surface dust suppression of roads (associated with the Section 21 (j) application)
Section 21 (j)	Removal of water from underground for the safe continuation of mining

Authorisation of the abovementioned water uses will require an application for an Integrated Water Use Licence (IWUL) in terms of the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GNR. 267 of 2017).

The IWUL application will be supported by an Integrated Water and Waste Management Plan (IWWMP) compiled in accordance with the requirements of Annexure D of the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GNR. 267 of 2017). The regulated timeframes for an Integrated Water Use Licence Application process in terms of GN R. 267 of 2017 are provided in Figure 4.

GNR. 704 Exemptions

It should also be noted that an application will be made for exemption of activities regulated in terms of regulations 4, 5, 6 and 7 of the Regulations on Use of Water for Mining and Related Activities Aimed at the Protection of Water Resources (GNR. 704 of 1999) to existing and proposed infrastructure associated with the proposed project.

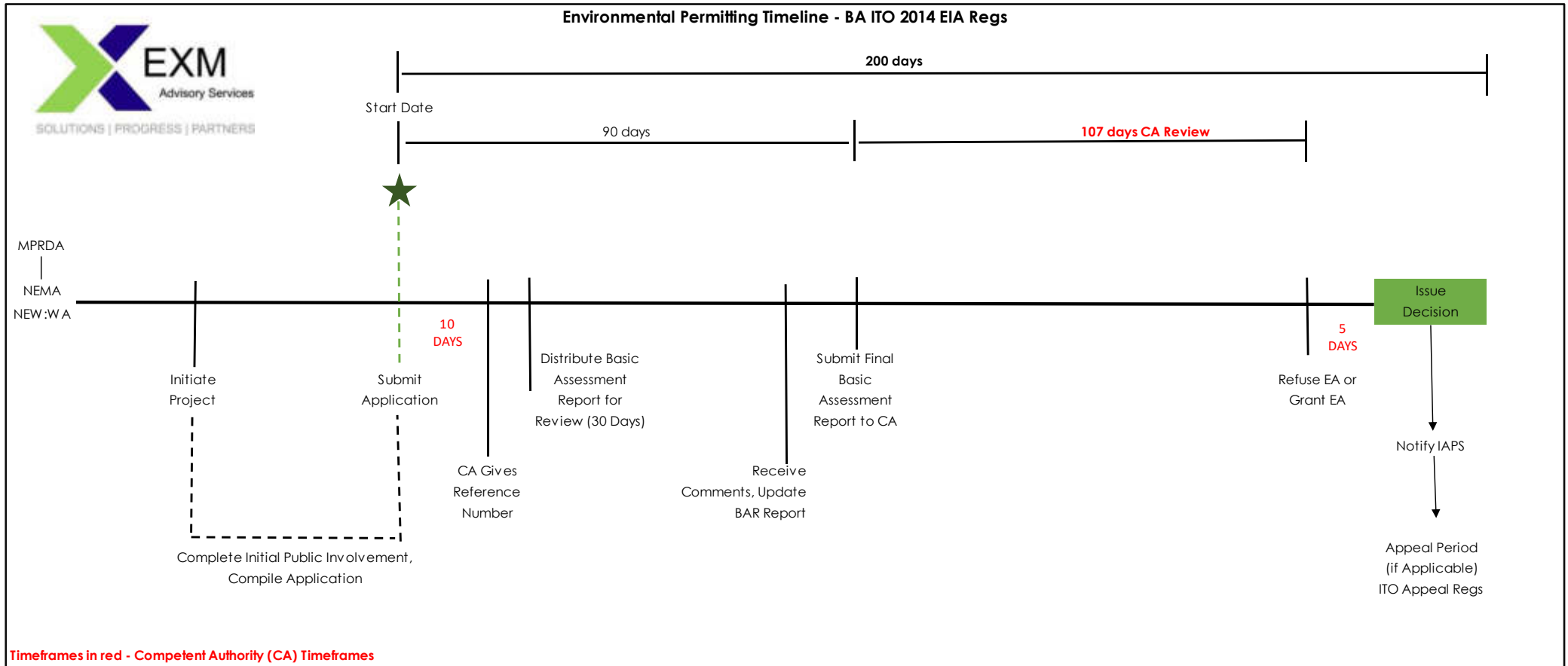


FIGURE 3: BASIC ASSESSMENT PROCESS

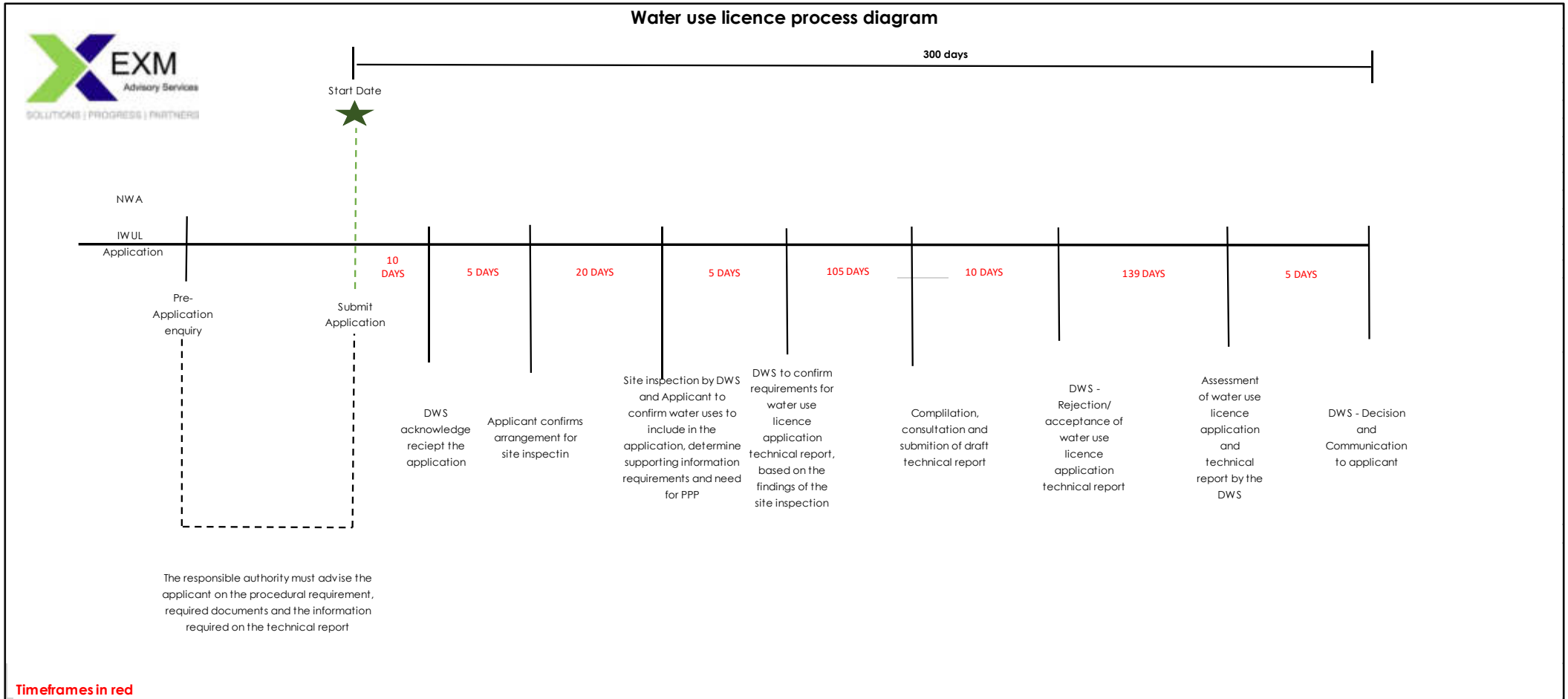


FIGURE 4: INTEGRATED WATER USE LICENCE APPLICATION PROCESS

4. Public Participation Process

A public participation process is being undertaken as part of the applications. The process is conducted in terms of the NEMA EIA regulations (GNR. 982 of 2014, as amended) and the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GNR 267 of 2017) promulgated under the National Water Act, 1998 (Act No.36 of 1998). Stakeholders are offered the opportunity to be informed about the application, raise comments, issues or concerns and provide input into the application and reports.

Interested & affected parties are invited to participate in the environmental process. You can provide input by:

- Registering as an interested & affected party (IAP);
- Asking questions and raising initial concerns by completing and returning the response sheet (attached);
- Attending public meeting (The date, time and venue of this meeting will be communicated well in advance to all registered interested and affected parties);
- Reviewing and providing comment on reports.

Interested & affected parties will be invited to attend a **public meeting** which will take place after completion of the specialist investigations and after the technical reports have been prepared. All I&APs will be inform when all the documents will be available for review.

Should you have questions or require more information, **please contact:**

Trevor Hallatt

EXM Advisory Services

Cell: 071 689 2229 Office: 010 007 3617

Fax: 086 616 0443

Email: trevor@exm.co.za

PO Box 1822, Rivonia, 2128

Yours sincerely



Kerry Fairley

EXM Advisory Services (Pty) Ltd

Annexure B3
Proof of BID distribution

Proof of distribution of BID (hand delivery)

ZINOJU COAL (PTY) LTD

ATTENDANCE REGISTER FOR PUBLIC NOTIFICATION

PROJECT: WATER USE LICENSE & BASIC IMPACT ASSESSMENT FOR THE REFURBISHMENT OF THE OLD BALGRAY COLLIERY NEAR DUNDEE, KWAZULU-NATAL

29 August 2019



NAME / NAAM	FARM/COMPANY/ PRIVATE / PLAAS/ MAATSKAPPY / PRIVAAT	PHONE / FOON	EMAIL / EPOS	SIGNATURE / HANTEKENING
Florens		0736677089		
Fattle 19		0785824472		
NONHLHUKA Nkomozi		0765407348		
NtAmeni, Nqumiso		0715431503	nonhlhuka@zco.co.za	
G.S. Lungu		0636582382		

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NAME / NAAM	FARM/COMPANY/ PRIVATE / PLAAS/ MAATSKAPPY / PRIVAAT	PHONE / FOON	EMAIL / EPOS	SIGNATURE / HANDTEKENING
Clive Mordant	Private	061 5284399	clivemordant@gmail.com	
Riaan Youngs	"	083 4452576	rikeygen@qhuba.co.uk	
Attie de Lange		072 577 0069		
Robbie Swynn		076 597 2830		
Zanele Maliso		073 930 439		
Buthlezi MANDVA		083 6969 300		

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NAME / NAAM	FARM/COMPANY/ PRIVATE / PLAAS/ MAATSKAPPY / PRIVAAT	PHONE / FOON	EMAIL / EPOS	SIGNATURE / HANDTEKENING
XXXXXXXXXXXXXXXXXXXX				
Von Zyl/Comptie		082 994 3644		
Andrea Erwee	Private	0843716868	erwee.see@gmail.com	
* Louis Steenkamp	Pvt	0827228258	lsteinf@dundeezn.co.za	
* S.R. Kumbhakir	Private	0829255700		
HL Mordant	N.E.S.S	0837766336	HLN.E.S.S@Dundee	

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NAME / NAAM	FARM/COMPANY / PRIVATE / PLAAS / MAATSKAPPY / PRIVAAT	PHONE / FOON	EMAIL / EPOS	SIGNATURE / HANDEKENING
B. Kelbrick		0636043116		
Pinky RADLEY		072 466 5457 632822277		
MN Butheley		0720519531		
EN Sanga		0713041074		
GIFL-EDWARD		0714083476		

S:man







0768960869

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NAME / NAAM	FARM/COMPANY/ PRIVATE / PLAAS/ MAATSKAPPY / PRIVAAT	PHONE / FOON	EMAIL / EPOS	SIGNATURE / HANDTEKENING
Sheki Zha	Private	0718 64 1948	sheki.zha59@gmail	
M. Z. Bheuzi	Private	082 54 02171	N/A	
Z. Kunene	Private	0769712174	N/A	
H. F. Mbatkha Rodwa	Private	0766007177	h.fengijwe21551@icloud.com	
P. N. Hlangwane wasova Sama	Private	0834346150 0600542370	Nompu m zhe 10	
Iqbal Zungu		0783750191		

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NAME / NAAM	FARM/COMPANY/ PRIVATE / PLAAS/ MAATSKAPPY/PRIVAAT	PHONE / FOON	EMAIL / EPOS	SIGNATURE / HANDTEKENING
IS Potgieter	"Oppie Koppie"	0834097932	jand@tinky.co.za	
AB Potgieter	"Oppie Koppie"	0845527992	jand@tinky.co.za	
J J Human	MC PHAIA 31 CATERGEBUW	0713687655	ALETH@TRUST NET.CO.ZA	
S Bergsen	MC PHAIL 30	0844150822		
D. de Wet	28 McPhail Rd	082813827	Phone forward	
N. C. Kromme	36 McPhail Road			



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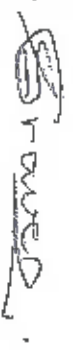
NAME / NAAM	FARM/COMPANY/ PRIVATE / PLAAS/ MAATSKAPPY/PRIVAAT	PHONE / FOON	EMAIL / EPOS	SIGNATURE / HANDTEKENING
Carren Cattel	Private	082 774 5744	carrenml@gmail.com	
Johann van Merwe	Private	083 72 33980	johann.vanmerwe@wondermail.co.za	
Shane Simmers	Private	082 5184272	shanesimm@gmail.com	
Jody Mitchell	Pvt	083 293 2133	clairs@mitchell.co.za	
Sise Ndaba	B	0792475861		
Bogana		0186936553		

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NAME / NAAM	FARM/COMPANY/ PRIVATE / PLAAS/ MAATSKAPPY/PRIVAAT	PHONE / FOON	EMAIL / EPOS	SIGNATURE / HANDTEKENING
F. Porter	Private	0834346160	FAHRANAPORT@GMAIL.COM	
H. Shabangu	Private	0824278460	hresson03@gmail.com	
Remembrance		0761193206		
J. Khumbule	Private	0619843370	joshkhumbule@gmail.com	
Wendy Abraham	Private	0817011426	wendy.abraham 13@gmail.com	
J. S. Crauen	Private	0825402260	X	

Proof of distribution of BID (SMS)

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Proof of distribution of BID (email)

From: [Trevor Hallatt](mailto:Trevor.Hallatt@exm.co.za)
To: [Trevor Hallatt](mailto:Trevor.Hallatt@exm.co.za)
Bcc: bernadetp@amafapmb.co.za; celester@amafapmb.co.za; mkhizen@amafapmb.co.za; james@heritagekzn.co.za
Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Wednesday, 30 October 2019 09:43:00
Attachments: [Zinoju Coal Environmental Authorisation BID_Final.pdf](#)

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT NEAR DUNDEE, KWAZULU-NATAL

Zinoju Coal proposes to recommission the old Balgray colliery near Dundee in Kwazulu Natal in order to gain access and mine the underground coal reserves. EXM Advisory Services was appointed by Zinoju Coal as the Environmental Assessment Practitioner to conduct a Basic Environmental Impact Assessment (BA) and Water Use Licence (WUL) Application for the recommissioning of the Balgray Colliery in order to obtain an Environmental Authorisation (EA) for the project. A Public Participation Process is conducted in support of the BA and WUL application to inform the identified Interested and/or Affected Parties of the project and allow them to comment.

The relevant documentation is being developed and all registered I&APs will be provided access to comment on all reports (once finalized) in support of the BA and WUL application. A public meeting will also be conducted and the I&APs will be informed of the exact time and date thereof.

Please find attached a Background Information Document (BID) which contains information regarding the project and EA application process. If you wish to register as an I&AP, please send your name and contact information to the email or cell phone number below.

Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



TREVOR HALLATT
ENVIRONMENTAL SCIENTIST
MA ENVIRONMENTAL MANAGEMENT

T: +27 (0) 10 007 3617

M: +27 (0) 71 689 2229

W: WWW.EXM.CO.ZA

This email is confidential, may also be legally privileged and is intended for the exclusive use of the recipient to whom it is addressed. If you are not the intended recipient, any disclosure, copying, distribution or any action taken or omitted to be taken in reliance on it, is prohibited and may be unlawful.

From: [Trevor Hallatt](mailto:Trevor.Hallatt@exm.co.za)
To: fin@dundeejs.co.za; mike.h@andersonusgt.co.za; kdejager@kznatal.co.za; Ischroed@kuz.co.za; ncs@trustnet.co.za; green@gmj.co.za; green@gmj.co.za; beth.toadhill@gmail.com; fin@dundeejs.co.za; anton@aft.bz; FAHRANAROTOL@gmail.com; pressou03@gmail.com; jobelihlesthole@gmail.com; wendyabraham13@gmail.com; HMNPZDS@gmail.com; clivemordaunt@gmail.com; rokruger@yahoo.co.uk; attiedelange0@gmail.com; mdumela@9zeroseven.com; carienn4@gmail.com; johannvandermerwe@vodamail.co.za; shanesimm@gmail.com; claims@jitchell.co.za; marcp@dreykon.co.za; bhekizitha59@gmail.com; hlengiwe21551@icloud.com; Janet@tinky.co.za; Janet@tinky.co.za; ALETH@trustnet.co.za; beth.toadhill@gmail.com
Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Friday, 06 September 2019 12:51:00
Attachments: [Zinoju Coal Environmental Authorisation BID_Final.pdf](#)

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT NEAR DUNDEE, KWAZULU-NATAL

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Please find attached a Background Information Document (BID) which contains information regarding the project and EA application process. If you wish to register as an I&AP, please send your name and contact information to the email or cell phone number below.

Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



TREVOR HALLATT
ENVIRONMENTAL SCIENTIST
MA ENVIRONMENTAL MANAGEMENT

T: +27 (0) 10 007 3617

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From: [Trevor Hallatt](#)
To: [Willie Faber](#)
Bcc: [weinersd@kznwildlife.com](#); [caroline@endumeni.gov.za](#); [archeology@amafapmb.co.za](#); [mbonenin@dannhauser.gov.za](#); [mothile@amajuba.gov.za](#); [peter.woolf@kzndhs.gov.za](#); [StarkeyA@dws.gov.za](#); [MdluliB@dws.gov.za](#); [BuhleM@daff.gov.za](#); [mtambom@kznwildlife.com](#); [jerry.mfusi@kzndard.gov.za](#); [sizile.mthalande@drdlr.gov.za](#); [sam.mothilal@kzntransport.gov.za](#); [douglas.zungu@drdlr.gov.za](#); [Rodney.Harrylal@transnet.net](#); [Thabisile.sakyi@kznhealth.gov.za](#)
Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Friday, 06 September 2019 13:00:00
Attachments: [Zinoju Coal Environmental Authorisation BID_Final.pdf](#)

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Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



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From: [Trevor Hallatt](mailto:Trevor.Hallatt@exm.co.za)
To: [Willie Faber](mailto:Willie.Faber@newcastle.gov.za)
Bcc: sipho@amajuba.gov.za; musan@amajuba.gov.za; errol.mswane@Newcastle.gov.za; mm@newcastle.gov.za; mayor@newcastle.gov.za; nelisiwe.jele@newcastle.gov.za; Jabulisile.khumalo@Newcastle.gov.za; sibusiso@newcastle.gov.za; zikhali@newcastle.gov.za; mandlazikhali0@gmail.com
Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Friday, 06 September 2019 13:02:00
Attachments: [Zinoju Coal Environmental Authorisation BID Final.pdf](#)

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT NEAR DUNDEE, KWAZULU-NATAL

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Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



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From: [Trevor Hallatt](mailto:Trevor.Hallatt@exm.co.za)
To: [Trevor Hallatt](mailto:Trevor.Hallatt@exm.co.za)
Bcc: cllrmbatha@gmail.com; mayor@endumeni.gov.za; mm@endumeni.gov.za; pamm@endumeni.gov.za; nthethwan@endumeni.gov.za; techsec@umzinyathi.gov.za; oodley@umzinyathi.gov.za; mayor@umzinyathi.gov.za; mm@umzinyathi.gov.za; Vanessa.Maciou@kzndae.gov.za; hod.pa@kzndard.gov.za; bernadetp@amafapnb.co.za; dsibayi@sahra.org.za; Petronella.Sithebe@Kzntransport.gov.za; Mbali.mhlongo@kzndhs.gov.za; musa.mntamo@kznwildlife.com; cllrnakaba@gmail.com
Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Wednesday, 30 October 2019 09:35:00
Attachments: [Zinoju Coal Environmental Authorisation BID_Final.pdf](#)

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

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Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



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ENVIRONMENTAL SCIENTIST
MA ENVIRONMENTAL MANAGEMENT

T: +27 (0) 10 007 3617

M: +27 (0) 71 689 2229

W: WWW.EXM.CO.ZA

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From: [Trevor Hallatt](mailto:Trevor.Hallatt@exm.co.za)
To: ngidil@endumeni.gov.za
Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Tuesday, 19 November 2019 13:16:00
Attachments: [Zinoju Coal Environmental Authorisation BID_Final.pdf](#)

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT NEAR DUNDEE, KWAZULU-NATAL

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Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



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MA ENVIRONMENTAL MANAGEMENT

T: +27 (0) 10 007 3617

M: +27 (0) 71 689 2229

W: WWW.EXM.CO.ZA

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From: [Trevor Hallatt](#)
To: ["koosnsimotors@gmail.com"](mailto:koosnsimotors@gmail.com)
Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Wednesday, 20 November 2019 09:29:00
Attachments: [Zinoju Coal Environmental Authorisation BID_Final.pdf](#)

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

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Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



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Annexure B4

Proof of site notice placement

OLD BALGORE COLLIERY
ADIT RECOMMISSIONING PROJECT DUNEE, ERINAGALLI WATA
NOTICE OF THE ENVIRONMENTAL IMPACT PROCESS


The Department of Environmental Protection (DEP) is currently assessing the potential impacts of the Old Balgore Colliery Adit Re-commissioning Project (the Project) on the environment. The Project is located in the Erinagalli Wata area, approximately 10 km north of the town of Balgore, in the Northern Territory.

The Project involves the re-commissioning of an existing adit (underground passage) for the purpose of coal seam gas (CSG) extraction. The Project will include the construction of a new adit shaft, the installation of a new pumping station, and the re-commissioning of the existing adit.

The Project is expected to have both direct and indirect impacts on the environment. The most significant impacts are likely to be related to the construction and operation of the Project, including the potential for noise, dust, and vibration. Other potential impacts include the potential for changes to groundwater levels and the potential for impacts on local vegetation and fauna.

The DEP is currently assessing the potential impacts of the Project and is seeking input from the community. A public consultation process will be undertaken, including the holding of public meetings and the distribution of information materials. The results of the assessment will be used to develop an Environmental Impact Statement (EIS) for the Project.

If you have any comments or concerns about the Project, please contact the DEP on 08 8947 7000 or visit our website at www.depwat.gov.au.



DEPARTMENT OF ENVIRONMENTAL PROTECTION





INDUO COAL PTY LTD
OLD BALORAY GALLERY
ADIT RECOMMISSIONING PROJECT (INDUO, KINSHASA, NATA)

NOTES OF THE ENVIRONMENTAL SPECIALIST

These notes are intended to provide information to the public regarding the environmental impacts of the Old Baloray Gallery Adit Recommissioning Project. The project involves the re-opening of an existing adit for coal transport. The project area is located in the Kinshasa region, near the town of Nata. The project area is situated in a rural area with dry grass and scattered trees. The project area is located in the Kinshasa region, near the town of Nata. The project area is situated in a rural area with dry grass and scattered trees.



Map of the Project Area

The map shows the project area in the Kinshasa region, near the town of Nata. The project area is situated in a rural area with dry grass and scattered trees. The map includes a scale bar and a north arrow.



OLD BIRCH GRAY COLLEGE
ASBESTOS RECOMMENDATION PROJECT DUNDEE, KZN

RESULTS OF THE ENVIRONMENTAL IMPACT ASSESSMENT

1. INTRODUCTION

The purpose of this report is to provide a summary of the findings of the Environmental Impact Assessment (EIA) for the proposed asbestos removal project at Old Birch Gray College, Dundee, KwaZulu-Natal. The project involves the removal of asbestos-containing materials (ACM) from the college premises, which is a necessary step to ensure the health and safety of the college community.

2. PROJECT DESCRIPTION

The project is a Phase 1 asbestos survey and removal project. It involves the identification, assessment, and removal of ACM from the college buildings. The project is being undertaken by a qualified asbestos removal contractor.

3. ENVIRONMENTAL IMPACT ASSESSMENT

The EIA was conducted to assess the potential environmental impacts of the project. The assessment considered the following factors:

- 3.1. Air Quality: The removal of ACM can result in the release of asbestos fibers into the air. However, the project is being undertaken in a controlled manner, and the release of fibers is expected to be minimal. The assessment also considered the potential for asbestos fibers to settle on nearby vegetation and soil.
- 3.2. Noise: The project involves the use of heavy machinery and equipment, which can generate noise. However, the noise is expected to be limited to the duration of the project and is not expected to have a significant impact on the surrounding environment.
- 3.3. Water Quality: The project involves the use of water for dust suppression and cleaning. The assessment considered the potential for asbestos fibers to be transported to nearby water bodies. However, the project is being undertaken in a controlled manner, and the release of fibers into the water is expected to be minimal.
- 3.4. Soil Quality: The project involves the removal of ACM from the college premises, which can result in the release of asbestos fibers into the soil. However, the project is being undertaken in a controlled manner, and the release of fibers into the soil is expected to be minimal.

4. CONCLUSIONS

The EIA has identified the potential environmental impacts of the project. However, the assessment also identified a number of measures that can be taken to minimize these impacts. These measures include the use of dust suppression techniques, the use of appropriate personal protective equipment (PPE), and the proper disposal of asbestos waste.

5. RECOMMENDATIONS

The following recommendations are made to ensure the successful completion of the project and to minimize environmental impacts:

- 5.1. The project should be undertaken in a controlled manner, with the use of appropriate PPE and dust suppression techniques.
- 5.2. The asbestos waste should be properly disposed of in a licensed asbestos disposal facility.
- 5.3. The college should be notified of the project and the measures being taken to minimize environmental impacts.

6. REFERENCES

6.1. National Environmental Management Act (NEMA), 1989.

6.2. Environmental Impact Assessment Regulations, 2014.

6.3. Asbestos Regulations, 2002.

6.4. Asbestos Removal Guidelines, 2002.

6.5. Asbestos Management Guidelines, 2002.



Annexure B5

Proof of advertisement



'Remarkable' women honoured by college

With Women's Month drawing to a close, the Majuba TVET College hosted an event at the Phumula Nathi Motel in honour of all its remarkable women.

All 365 ladies radiated as they unveiled the "Colours of a Woman" that was the theme for the event. D Hassim, Majuba's chief financial officer, delivered a speech on behalf of the principal, SJ Mlotshwa. "All of you here are very important and you are all queens. That is why it is important to love and celebrate who you are," said Hassim.

Guest speakers included Mr Wow, a local young comedian, who left the ladies in stitches with his fresh and funny jokes. Later, the ladies got into action by participating in a fun



and exciting Zumba class hosted by personal trainer, Mr Nathi. Finally, Z Mchunu, Amjuba District psychologist, delivered a very informative presentation which focused on a condition which affects a lot of women, depression. She spoke on the causes of this condition and how it should be treated.

After a series of games, dancing and singing competitions, the ladies were treated to a hearty lunch. Overall, the ladies were spoilt and made to feel special and appreciated.

Newcastle High wins Future Artisans project



The Decade of the Artisan 2019 event got underway at the Newcastle Training Centre Campus, Barry Hertzog Park, last Tuesday. The event sought to promote artisanship as a career of choice to youth.

The years 2014 to 2024 has been declared as the "Decade of the Artisan" by the Department of Higher Education and Training (DHET) and came into existence as a result of lack of qualified artisans in the country to sustain industries and support economic growth. The month of August is therefore dedicated to artisan development.

Hundreds of Grade 9 pupils from across the district were welcomed to the event. SJ Mlotshwa, Majuba TVET College principal, welcomed delegates and guests.

"Our country needs more artisans, our country needs you, that is why it is of utmost importance that the correct subjects such as Mathematics and Science be chosen, this will impact your career positively and will present so many opportunities." Newcastle High School won the Future Artisans School Project Competition with Nhlosokuhle High School in second place.

ZINOJU COAL (PTY) LTD

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT DUNDEE, KWAZULU-NATAL

Notice is hereby given that Zinoju Coal (Pty) Ltd intends to refurbish and recommission the old Balgray Colliery located within the existing Aviemore Mining Right Area (Ref: KZN 30/5/1/2/2/301 MR). The recommissioned Balgray Colliery and proposed surface infrastructure will be located on the remaining extent of Portion 71, Portion 93 and Portion 116 of the Farm Craigsides No. 2272 GT. The proposed underground coal extraction will affect the remaining extent of the Farm Stony Braes No. 4475 GT as well as the remaining extent and portions 2 & 3 of the Farm Impati 10260 GT. These farms are located approximately 1.7 km north-west of the Dundee towns northern suburbs, KwaZulu-Natal Province.

Application is being sought for authorisation in terms of the following:

1. Section 102 of the Minerals and Petroleum Resources Development Act, 2002 for the amendment of the existing Zinoju Coal (Pty) Ltd: Aviemore Mine Environmental Management Programme (EMPr), as amended to include the activities relating to the recommissioning of the old Balgray Colliery;

2. Application for authorisation for **activities 14** - explosives magazine (storage of dangerous goods), **24** - construction of a road, **27** - clearance of vegetation > 1ha (5.5ha), **and 34** - dust suppression and Pollution Control Dam triggered in terms of listing Notice 1 (GNR. 983 of 2014) and **activities 4** - construction of road and **12** - clearance of vegetation > 300m2 in a critical biodiversity area triggered in listing Notice 3 (GN R. 985 of 2014) which requires environmental authorisation in terms of National Environmental Management Act, 1998 (Act No 107 of 1998). The application must be supported by a **Basic Assessment process** in terms of Regulation 19 of the Environmental Impact Assessment Regulations (GN R982 of 2014, as amended by GN R326 of 2017); and

3. An application for a Integrated Water Use Licence in terms of section 40 of the National Water Act, 1998 (Act No. 36 of 1998) (NWA) for new water uses as defined in terms of Section 21 **(c)** - impeding or diverting the flow of water in a watercourse; **(g)** - disposing of waste in a manner which may detrimentally impact on a water resource; **(i)** - altering the bed, banks or characteristics of a watercourse; and **(j)** - removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people. The application will be made in terms of the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GN R267 of 2017).

Interested & affected parties are also invited to attend a public information-sharing meeting: All registered Interested & affected parties will be invited to attend a public information-sharing meeting. The date and time will be communicated well in advance.

You are hereby invited to register as an interested and affected party before 30 September 2019 to receive further information, review reports and to raise environmental issues, concerns and objection to the application. Please kindly make written submission to:

Trevor Hallatt
EXM Advisory Services (Pty) Ltd

Tel: 010 007 3617 • Fax: 086 616 0443 • Post: PO Box 1822, Rivonia, 2128
Email: trevor@exm.co.za



'Biggest' blood drive to date



Ferris High School hosted the most successful blood clinic thus far for 2019. About 107 units of blood was collected in a day.

At the recent clinic held at the school, the South African National Blood Services (SANBS) set a target of 65 units. Through

the efforts of peer promoters, pupils and educators, this target was far surpassed.

About 129 people went to the school to donate blood. According to Shavani Sewpaul, donor relations practitioner for SANBS, the blood drive donation translates into 321 lives being saved.

MLS learners wow at matric farewell



Flery in red, Noore Sattar and Amman Bhomat are accompanied by these two handsome tiny tots. PHOTOS BY JADE MOODLEY



From Left: Gezel Griffiths, Zaakirah Iqbal, Sthabile Hlatshwayo, Talia Griffiths, Hazel Nkosi and Noore Sattar.



Pretty in pink: Zaakirah Iqbal and Rowan Gaskin.



Sultry in silver: Gezel Griffiths and Carlos Estrice.



Hazel Nkosi and her partner Hakeem Robson.



From Left: Sbhongakonke Dlamini, Sthabile Hlashwayo, Talia Griffiths, Sibongakonke Kunene, Lusanda Mchunu and Clive Majola.



Simply elegant: Shaneek Deosaran and Saval Romano.



Ayanda Kunene and her partner Nhlanhla Mncwabe.

**ZINOJU COAL (PTY) LTD
OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT
DUNDEE, KWAZULU- NATAL**

Notice is hereby given that Zinoju Coal (Pty) Ltd intends to refurbish and recommission the old Balgray Colliery located within the existing Avimore Mining Right Area (Ref: KZN 30/5/1/2/2/301 MR). The recommissioned Balgray Colliery and proposed surface infrastructure will be located on the remaining extent of Portion 71, Portion 93 and Portion 116 of the Farm Craigsides No. 2272 GT. The proposed underground coal extraction will affect the remaining extent of the Farm Stony Braes No. 4475 GT as well as the remaining extent and portions 2 & 3 of the Farm Impati 10260 GT. These farms are located approximately 1.7 km north-west of the Dundee town's northern suburbs, KwaZulu-Natal Province.

Application is being sought for authorisation in terms of the following:

1. Section 102 of the Minerals and Petroleum Resources Development Act, 2002 for the amendment of the existing Zinoju Coal (Pty) Ltd: Avimore Mine Environmental Management Programme (EMPr), as amended to include the activities relating to the recommissioning of the old Balgray Colliery;
2. Application for authorisation for **activities 14** – explosives magazine (storage of dangerous goods), **24** – construction of a road, **27** – clearance of vegetation > 1ha (5.5ha), **and 34** – dust suppression and Pollution Control Dam triggered in terms of listing Notice 1 (GNR. 983 of 2014) and **activities 4** – construction of road and **12** – clearance of vegetation > 300m2 in a critical biodiversity area triggered in listing Notice 3 (GN R. 985 of 2014) which requires environmental authorisation in terms of National Environmental Management Act, 1998 (Act No 107 of 1998). The application must be supported by a **Basic Assessment process** in terms of Regulation 19 of the Environmental Impact Assessment Regulations (GN R982 of 2014, as amended by GN R326 of 2017); and
3. An application for a Integrated Water Use Licence in terms of section 40 of the National Water Act, 1998 (Act No. 36 of 1998)(NWA) for new water uses as defined in terms of Section 21 (c) – impeding or diverting the flow of water in a watercourse; (g) – disposing of waste in a manner which may detrimentally impact on a water resource; (i) – altering the bed, banks or characteristics of a watercourse; and (j) – removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people. The application will be made in terms of the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GN R267 of 2017). Interested & affected parties are also invited to attend a public information-sharing meeting:

All registered Interested & affected parties will be invited to attend a public information-sharing meeting. The date and time will be communicated well in advance.

You are hereby invited to register as an interested and affected party before 30 September 2019 to receive further information, review reports and to raise environmental issues, concerns and objection to the application. Please kindly make written submission to:

Trevor Hallatt

EXM Advisory Services (Pty) Ltd

Tel: 010 007 3617 || Fax: 086 616 0443 || Post: PO Box 1822 || Rivonia, 2128 || Email: trevor@exm.co.za



Annexure B6

Comment and response report

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
AFFECTED PARTIES				
Landowners				
2019/09/23 (Email)	Toger Haupt	Good day Trevor As registered owners of Avoca farm –Property 28 – we hereby wish to be registered as an interested and affected party.	Mr. Haupt was added to the list of registered I&APs. All relevant documents will be circulated during the formal public participation process and review period.	In process
2019/09/06	Ndumiso Dlamini	Hi Trevor, I just received a message with regards to the abovementioned project. Could I kindly ask for the BID and any plans you may have of the area to be affected? We are based right by the Mpati Mountain, I believe will be the entry point. Thanks Regards,	Please find attached the BID for the project which contains the location as well as the conceptual layout plan. The entry point will be on the southern side of the mountain, north of Dundee. The BAR and specialist studies are being developed and the I&APs will be notified when it will be available for review.	In process
2019/08/30	Pam Mcfadden	Kindly register us as an interested party. Not sure if you are aware but Talana museum is the government accredited archive depot for all KZN coal mining material. Pam McFadden Curator Talana Museum, Battlefield and Heritage Park	Ms. Mcfadden was added to the list of registered I&APs. All relevant documents will be circulated during the formal public participation process and review period.	In process
2019/09/10	Stean Jacobs	Please could you include me as an interested and affected party regarding the Balgray Refurbishment Project. We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm. Furthermore, we are also concerned regarding the dust caused by trucks as the hauling road has already been scraped on the farms boundary and as such the dust will have a detrimental impact on the grazing capacity of the farm which in return will also affect the property's value.	Thank you for the correspondence regarding the proposed refurbishment of the Balgray Adit. Can you perhaps provide the name of the farm on which you are situated in order to gain context regarding your comments? I will add you to the list of interested and affected parties and inform you as the Basic Assessment and Water Use Licence continues. I will formally respond to your concerns stipulated below in due course	In process

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
		<p>We are also concerned for safety as a mine attracts unwanted attention, how will this be mitigated?</p> <p>It is my understanding that the access route will be crossing a river which has previously been dammed up without our knowledge and was washed away with one of the storms. Will the river be dammed up again or how will our farm be affected?</p>	<p>once all the reports have been developed and all information is available to provide an informed response. You will also be provided access to the documentation for comment once ready for review.</p>	
		<p>On a previous occasion a contractor also used the area as a borrow pit and excavated material on our property without any prior consent. We would like to ensure no such events occur in future and that our fence lines will remain intact and on their correct positions at all times.</p> <p>Kind Regards Stean Jacobs 074 8999 455 Avoca Farm</p>	<p>All the comments were addressed. Refer to Annexure B6 for the comments and response report.</p> <p>Ground water</p> <p>A model was created by the Geohydrological Specialist to determine the distance that pollution will travel in the underground water regime as a result of the Balgray project. From the model, the following is noted:</p> <ul style="list-style-type: none"> • The 250 mg/l and 500 mg/l SO₄ contours remain in close proximity to the mining infrastructure; • The 250 mg/l and 500 mg/l SO₄ contours do not intercept major rivers. <p>The fountain in question falls outside the Zone of Influence with regards to the migration of pollution as a result of the mining operations and is unlikely to be affected. It should also be noted that springs in the area are situated approximately 60 to 100 m above the coal seam, and likely originate from the dolerite sill overlying the proposed Balgray section. In context this means that even if the spring falls within the ZOI, poor quality seepage at these springs is highly unlikely.</p>	

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
			<p>The predicted 2D aquifer drawdown zone at Life of Mine (LOM) for the Balgray project, is shown by Figure 2 provided. From the drawdown zone of influence generated, the following is noted:</p> <ul style="list-style-type: none"> • A maximum aquifer drawdown of 3 m, can be expected, with the lowest drawdown in the order of 0.1 m. It should be noted that the drawdown ZOI indicates drawdown in the aquifer layer directly above the underground workings. Hence, drawdown in regional water tables in the uppermost reaches of the mountain, is unlikely (due to mine depth). • No groundwater users (discovered during the survey) fall within the dewatering ZOI. • No perennial streams fall within the dewatering ZOI due to the dewatering depth underneath the mountain area (> 300 m). • The springs discovered in the area, namely spring F3 and spring F2, likely fall within the 0.3 m drawdown ZOI. Hence, the impact on the springs is likely to be low to insignificant. <p>Air Quality</p>	

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
			<p>An Air Quality Impact Assessment was conducted by Agreeco (2019) to determine the potential air quality related impacts associated with the proposed project. A model was created to determine the potential dust fall associated with the activities. It should be noted that the model shows the worst-case scenario without the application of mitigation measures. The National Dust Control Regulations (NDCR) standards for acceptable dust fallout rates are 600 mg/m²/day for residential areas and 1 200 mg/m²/day for non-residential areas. A figure was provided that shows the modelled dust fallout for the site on a daily average (24-hr). The results show no exceedances in residential and non-residential areas. The maximum dust fallout value to be reached according the air dispersion model is 488 mg/m²/day, which is well below the acceptable limits prescribed by the NDCR for residential areas.</p> <p>A figure was provided that shows the highest dust fallout for the site on a monthly average. According to the air dispersion model the maximum dust fallout value to be reached is 7 187 mg/m²/month. These values divided by 30 (or the amount of monitoring days in the month) is equal to 240 mg/m²/day, which is well below the acceptable limits prescribed by the NDCR for residential areas.</p>	

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
			<p>Safety</p> <p>The mitigation proposed in the Environmental Management Programme regarding impacts related to safety are as follows:</p> <ul style="list-style-type: none"> • Manage recruitment process to control expectations and unnecessary in-migration. • Implement controlled access to project site and monitor activity in immediate surrounding sites/area. • Set up local community safety forum. • Maintain contact with major community stakeholders. <p>River crossing</p> <p>A river crossing will be established across the Streskstroom river on the access road according to engineering designs that will allow for the flow of water underneath. A Water Use Licence (WUL) application is conducted to establish the river crossing. The river will not be dammed up as part of the project.</p> <p>Borrow pit</p>	

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
			<p>A borrow pit will be established on the site to source material for construction purposes and is included in the environmental authorisation process. The Basic Impact Assessment Report will contain the site layout which will show the location of all the infrastructure, including the borrow pit. The borrow pit will be located on the property on which the proposed infrastructure will be established according to the layout plans provided by the Applicant.</p>	
2019/09/05	Marc Dreykon	<p>Afternoon Trevor</p> <p>I would like to register as an interested party regarding the refurbishment of the old Balgary adit and receive information as the application proceeds.</p> <p>Cell:079 847 7343 Physical address: 35 McPhail Drive Email: marcp@dreykon.co.za</p> <p>Regards Marc</p>	<p>Please note that you have been added as an interested party for the proposed Refurbishment of the old Balgary adit. We will shortly commence with the formal public participation process and all documents will be made available for review. You will be notified as the process proceeds.</p>	In process
2019/10/15	Nandi Zaloumis-Mitchell	<p>We have not received any notification of a meeting as yet. Please advise when this will take place as I have numerous concerns.</p>	<p>Please note that you have been added as an interested party for the Basic Impact Assessment for proposed Refurbishment of the old Balgary adit. We will shortly commence with the formal public participation process and all documents will be made available for review. You will be notified as the process proceeds and when the public meeting will be.</p>	In process
2019/11/18	Stean Jacobs	<p>Good day Trevor.</p>	<p>Good day,</p>	In process

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
		<p>I see that the construction of a dam has already commenced on the Balgray refurbishment project. I was under the impression that the Environmental authorizations were still being applied for? When can we expect to be informed regarding the progress of the project? or alternatively be warned. Here is an aerial photograph of the dam being constructed. There are already a number of excavators and construction equipment on site.</p>	<p>Please refer to the reply from the Applicant below regarding the activities currently undertaken on-site. Please feel free to contact me at any stage if you would like clarification.</p> <p>Kind regards Trevor</p>	
		<p>Good day Trevor Attached please see the activities already being conducted on the "Balgray Farm". Is this in order as we have not been informed of anything final arrangements? Please advise. Kind Regards</p>	<p>Zinoju Coal Has confirmed that the activities that were undertaken was the land owner and not Zinoju Coal. Refer to Annexure B6 (comments and response report) for the full response</p>	In process
2019/09/18	Nandi Zaloumis-Mitchell	<p>Hi Trevor</p> <p>Please advise what is happening. I see allot of activity in that area including the use of large amounts of lights.</p> <p>When will this meeting take place?</p> <p>Kind Regards</p>	<p>Good day,</p> <p>Please refer to the below response from the applicant regarding your comment. The date of the meeting will be communicated early January 2020.</p> <p>Kind regards Trevor</p> <p>Zinoju Coal Has confirmed that the activities that were undertaken was not related to Zinoju Coal. Refer to Annexure B6 (comments and response report) for the full response</p>	In process
Local Authorities No comments received yet.				
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA etc.) No comments received yet.				

DATE	NAME	CORRESPONDENCE RECEIVED	EAPs RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	CONSULTATION STATUS (consensus, dispute, not finalised, etc.)
2019/10/31	Bernadet Pawandiwa KwaZulu –Natal Amafa and Research Institute	Good day Please submit the application as per guidelines on the application form J-Developments on www.heritagekzn.co.za.	Good day, We will submit the required form as required. Kind regards	In process
2019/09/20	Sub Directorate: Forestry Regulations & Support Department of Agriculture, Forestry and Fisheries	The Department of Agriculture, Forestry and Fisheries appreciates the opportunity to register as an interested and affected party for the above-mentioned project. DAFF through the sub-directorate Forestry Regulations and Support is the authority mandated to implement the National Forests Act No. 84 of 1998 by regulating the use of natural forests and protected trees species in terms of the said Act. The department would like to register as interested and affected party for the proposed project. With regards to the Background Information Document received on 11/09/2019, the proposed project will trigger activity 12 and 27 (clearing of indigenous vegetation). Therefore, the department recommend that ecological specialist report be conducted and incorporated to the Environmental Impact Assessment Report inclusive of the EMPr. This letter does not exempt you from considering other environmental legislations. Should any further information be required, please do not hesitate to contact this office.	Your attached comments regarding the refurbishment of the Old Balgray Colliery holds reference. Please note that we are in the process to finalise the relevant documents (BAR, IWWMP and Specialist Studies) as part of the application process. Relevant specialist studies including fauna, flora and aquatic assessments have been undertaken. I have added you to the list of registered I&APs. All the documentation once finalised will be communicated to the I&APs for comment. Please do not hesitate to contact me if you require additional information.	In process
Traditional Leaders No comments received yet.				
Competent Authorities affected No comments received yet.				
INTERESTED PARTIES No comments received yet				



agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

F 033 342 8783

DAFF

Mr. T. Sibozana

T 033 392 7721

Forestry Regulations & Support

20 September 2019

ThembalakheS@daff.gov.za P/Bag X9029

Pietermaritzburg, 3204091

EXM Advisory Services (Pty) Ltd

P.O Box 1822

Revonia

2128

Attention: Ms. Kerry Fairley

BACKGROUND INFORMATION DOCUMENT (BID) FOR THE PROPOSED REFURBISH AND RECOMMISSION OF THE OLD BALGRAY COLLIERY ON REMAINING EXTENT OF PORTION 71, PORTION 93 AND PORTION 116 OF THE FARM CRAIGSIDE 2272 GT. AFFECTING THE REMAINING EXTENT OF THE FARM STONY BRAES NO. 4475 GT AS WELL AS THE REMAINING EXTENT AND PORTION 2 & 3 OF THE FARM IMPATI NORTH-WEST OF THE DUNDEE TOWN'S NORTHERN SUBURBS, KWAZULU-NATAL PROVINCE.

The Department of Agriculture, Forestry and Fisheries appreciates the opportunity to register as an interested and affected party for the above-mentioned project. DAFF through the sub-directorate Forestry Regulations and Support is the authority mandated to implement the National Forests Act No. 84 of 1998 by regulating the use of natural forests and protected trees species in terms of the said Act.

The department would like to register as interested and affected party for the proposed project. With regards to the Background Information Document received on 11/09/2019, the proposed project will trigger activity 12 and 27 (clearing of indigenous vegetation). Therefore the department recommend that ecological specialist report be conducted and incorporated to the Environmental Impact Assessment Report inclusive of the EMPr.

This letter does not exempt you from considering other environmental legislations. Should any further information be required, please do not hesitate to contact this office.

Yours faithfully

Mr. T. Sibozana

Senior Forester: KZN Forestry Management
Forestry Regulations and Support

From: [Trevor Hallatt](mailto:Trevor.Hallatt@daff.gov.za)
To: PMBResourceCentre@daff.gov.za
Cc: ThembalakheS@daff.gov.za; AmkelaC@daff.gov.za
Subject: RE: DAFF Comments
Date: Wednesday, 20 November 2019 11:29:00
Attachments: [BID Old Balgray Colliery Farm Impati North West of Dundee.pdf](#)
[image001.png](#)

Good day,

Your attached comments regarding the refurbishment of the Old Balgray Colliery holds reference. Please note that we are in the process to finalise the relevant documents (BAR, IWWMP and Specialist Studies) as part of the application process. Relevant specialist studies including fauna, flora and aquatic assessments have been undertaken. I have added you to the list of registered I&APs. All the documentation once finalised will be communicated to the I&APs for comment. Please do not hesitate to contact me if you require additional information.

Kind regards
Trevor

From: PMB ResourceCentre <PMBResourceCentre@daff.gov.za>
Sent: 20 September 2019 09:27
To: Kerry Fairley <kerry@exm.co.za>
Cc: Thembalakhe Sibozana <ThembalakheS@daff.gov.za>; Amkela A.S. Chiya <AmkelaC@daff.gov.za>
Subject: DAFF Comments

Good morning,

Please find attached.

Should you have any queries, please do not hesitate to contact Thembalakhe on 033 392 7721 or ThembalakheS@daff.gov.za.

Regards,

PMB Resource Centre

Sub Directorate: Forestry Regulations & Support
Department of Agriculture, Forestry and Fisheries

Tel: 033 392 7700
Fax: 033 342 8783
Web: www.daff.gov.za
E-mail: PMBResourceCentre@daff.gov.za

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From: [Steane Jacobs](#)
To: [Trevor Hallatt](#)
Cc: [Toger Haupt](#); [Lelanie Haupt](#)
Subject: Balgray Refurbishment Project-Registration
Date: Tuesday, 10 September 2019 13:58:50

Good day Trevor,

Please could you include me as an interested and affected party regarding the Balgray Refurbishment Project. We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm.

Furthermore we are also concerned regarding the dust caused by trucks as the hauling road has already been scraped on the farms boundary and as such the dust will have a detrimental impact on the grazing capacity of the farm which in return will also affect the properties value.

We are also concerned for safety as a mine attracts unwanted attention, how will this be mitigated?

It is my understanding that the access route will be crossing a river which has previously been dammed up without our knowledge and was washed away with one of the storms. Will the river be dammed up again or how will our farm be affected?

On a previous occasion a contractor also used the area as a borrow pit and excavated material on our property without any prior consent. We would like to ensure no such events occur in future and that our fence lines will remain in tact and on their correct positions at all times.

Kind Regards
Steane Jacobs
074 8999 455
Avoca Farm

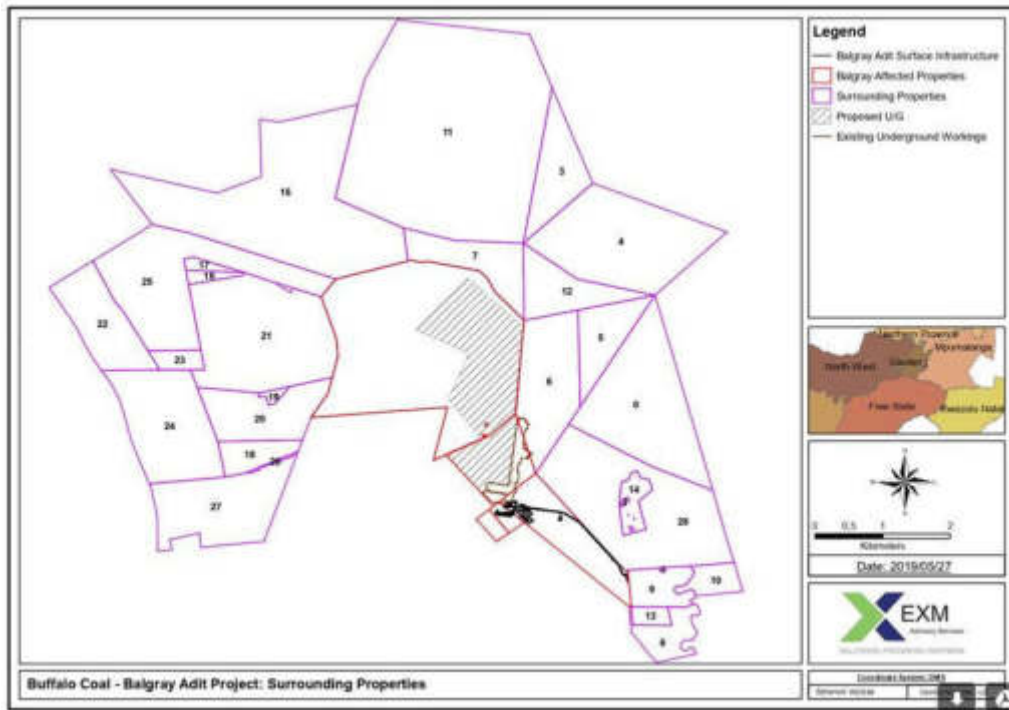
From: [Stein Jacobs](#)
To: [Trevor Hallatt](#)
Subject: Re: Balgray Refurbishment Project-Registration
Date: Tuesday, 10 September 2019 14:34:53
Attachments: [image.png](#)
[image.png](#)
[image.png](#)

Good day Trevor,

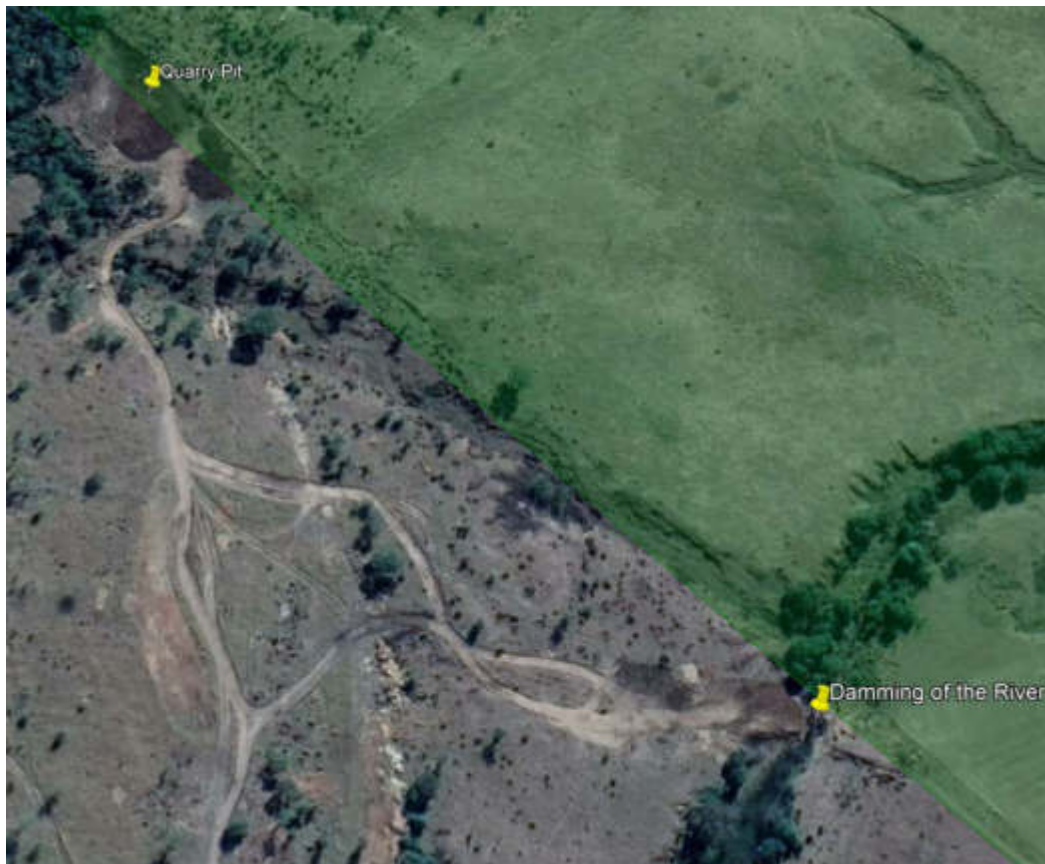
We are on Avoca Farm. I have included an aerial image of the location for your reference.



This map was previously communicated to us. It is my understanding that we are on property 28 and as such you can see the access road is adjacent to our property boundary line. The access road has already been constructed under the pretense of being a firebreak.



Below is an image taken from Google maps regarding the quarry that my previous email refers to and the damming of the river. In reference to this you can understand my concerns as I would NOT like this situation to be repeated



Best Regards
 Stean Jacobs

On Tue, Sep 10, 2019 at 2:09 PM Trevor Hallatt <trevor@exm.co.za> wrote:

Please could you include me as an interested and affected party regarding the Balgray Refurbishment Project. We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm.

Furthermore we are also concerned regarding the dust caused by trucks as the hauling road has already been scraped on the farms boundary and as such the dust will have a detrimental impact on the grazing capacity of the farm which in return will also affect the properties value.

We are also concerned for safety as a mine attracts unwanted attention, how will this be mitigated?

It is my understanding that the access route will be crossing a river which has previously been dammed up without our knowledge and was washed away with one of the storms. Will the river be dammed up again or how will our farm be affected?

On a previous occasion a contractor also used the area as a borrow pit and excavated material on our property without any prior consent. We would like to ensure no such events occur in future and that our fence lines will remain in tact and on their correct positions at all times.

Kind Regards

Stean Jacobs

074 8999 455

Avoca Farm

Good day Stean,

Thank you for the correspondence regarding the proposed refurbishment of the Balgray Adit.

Can you perhaps provide the name of the farm on which you are situated in order to gain context regarding your comments?

I will add you to the list of interested and affected parties and inform you as the Basic Assessment and Water Use Licence continues. I will formally respond to your concerns stipulated below in due course once all the reports have been developed and all information is available to provide an informed response. You will also be provided access to the documentation for comment once ready for review.

Kind regards

Trevor



TREVOR HALLATT
ENVIRONMENTAL SCIENTIST
MA ENVIRONMENTAL MANAGEMENT

T: +27 (0) 10 007 3617
M: +27 (0) 71 689 2229
W: WWW.EXM.CO.ZA

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From: Stean Jacobs <steanjacobs@gmail.com>
Sent: Tuesday, 10 September 2019 13:58
To: Trevor Hallatt <trevor@exm.co.za>
Cc: Toger Haupt <togerhaupt@gmail.com>; Lelanie Haupt <lelaniehaupt@gmail.com>
Subject: Balgray Refurbishment Project-Registration

Good day Trevor,

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT NEAR DUNDEE, KWAZULU-NATAL

Zinoju Coal proposes to recommission the old Balgray colliery near Dundee in Kwazulu Natal in order to gain access and mine the underground coal reserves. EXM Advisory Services was appointed by Zinoju Coal as the Environmental Assessment Practitioner to conduct a Basic Environmental Impact Assessment (BA) and Water Use Licence (WUL) Application for the recommissioning of the Balgray Colliery in order to obtain an Environmental Authorisation (EA) for the project. A Public Participation Process is conducted in support of the BA and WUL application to inform the identified Interested and/or Affected Parties of the project and allow them to comment.

The relevant documentation is being developed and all registered I&APs will be provided access to comment on all reports (once finalized) in support of the BA and WUL application. A public meeting will also be conducted and the I&APs will be informed of the exact time and date thereof.

Please find attached a Background Information Document (BID) which contains information regarding the project and EA application process. If you wish to register as an I&AP, please send your name and contact information to the email or cell phone number below.

Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



TREVOR HALLATT
ENVIRONMENTAL SCIENTIST
MA ENVIRONMENTAL MANAGEMENT

T: +27 (0) 10 007 3617

M: +27 (0) 71 689 2229

W: WWW.EXM.CO.ZA

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Response to comments/concerns regarding the refurbishment of the Balgray Colliery near Dundee

Date of comment: 22 November 2019

Name of party: Stean Jacobs

Designation: Adjacent land owner

1. Potential impact on water fountains

Comment:

We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm.

Response:

According to the coordinates you provided, the location of the fountain is indicated in the **Figure** below:

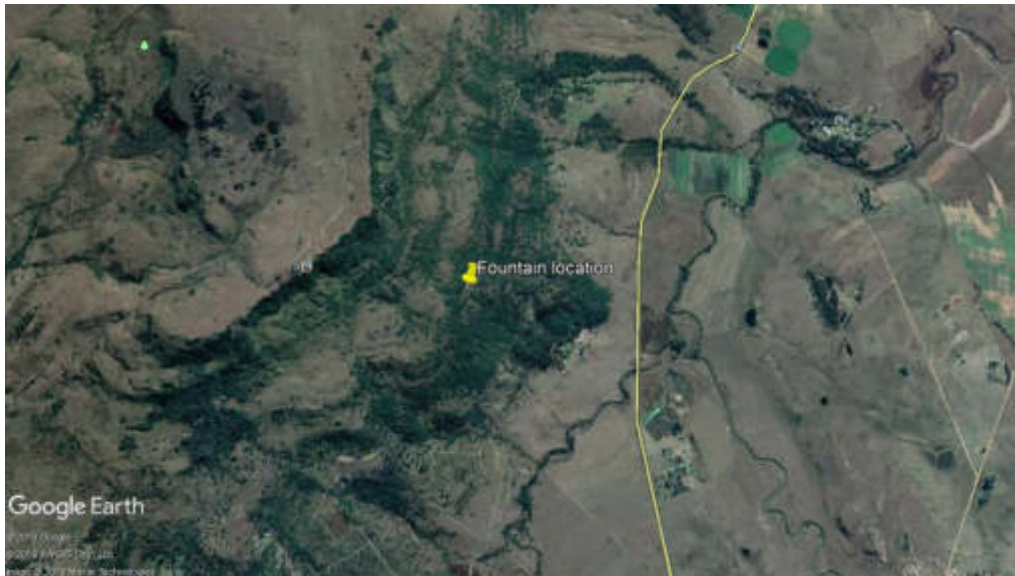


Figure 1: Location of fountain

A Geohydrological Specialist Study was conducted by GCS in 2019 to determine the impact of the Balgray project on the groundwater regime and water users. The specialist study will be made available for review as part of the formal public participation process.

- Impact on groundwater levels:

The Zone of Influence (Zoi) referred to below is defined as the maximum distance at which the aquifer drawdowns, due to the dewatering activities, will affect the groundwater regime and water users.

The predicted 2D aquifer drawdown zone at Life of Mine (LOM) for the Balgray project, is shown by **Figure 2**. From the drawdown zone of influence generated, the following is noted:

- A maximum aquifer drawdown of 3 m, can be expected, with the lowest drawdown in the order of 0.1 m. It should be noted that the drawdown ZOI indicates drawdown in

the aquifer layer directly above the underground workings. Hence, drawdown in regional water tables in the uppermost reaches of the mountain, is unlikely (due to mine depth).

- No groundwater users (discovered during the survey) fall within the dewatering ZOI.
- No perennial streams fall within the dewatering ZOI due to the dewatering depth underneath the mountain area (> 300 m).
- The springs discovered in the area, namely spring F3 and spring F2, likely fall within the 0.3 m drawdown ZOI. Hence, the impact on the springs is likely to be low to insignificant.

From **Figure 2** below, it is evident that the fountain in question falls outside the aquifer drawdown ZOI of the proposed dewatering activities as determined by the Geohydrological Specialist and impacts on the availability of water is not likely.

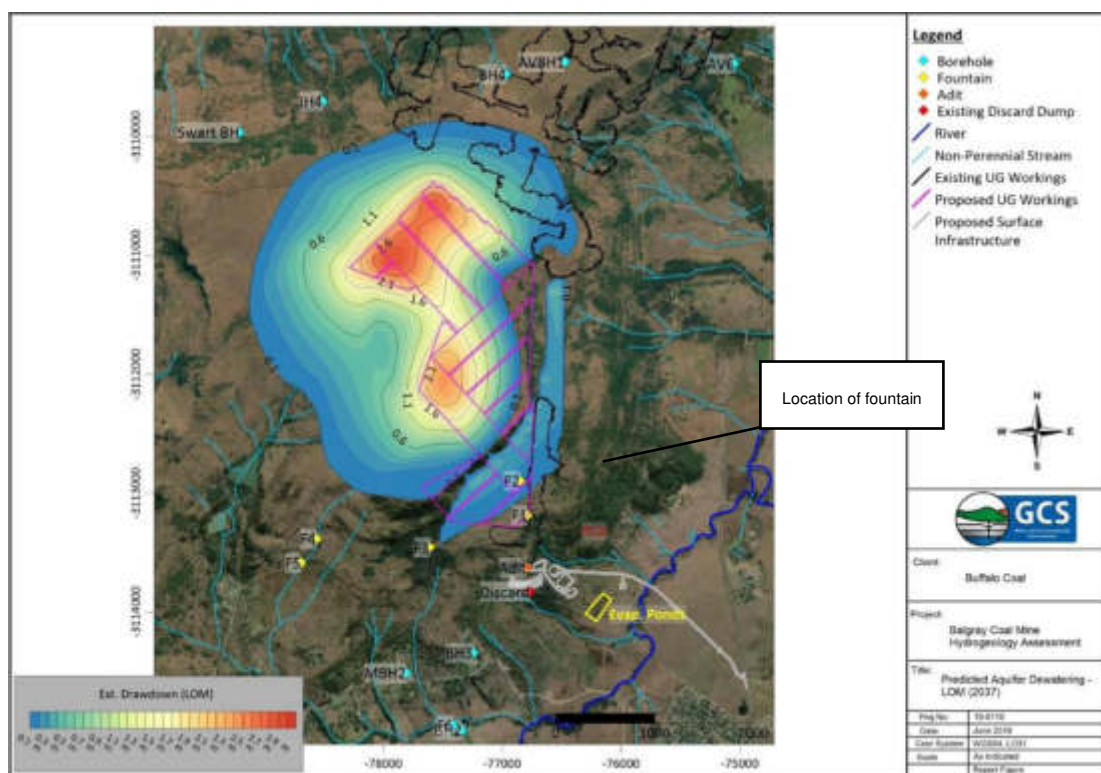


Figure 2: Aquifer drawdown Zone of Influence

- Impact on groundwater quality:

A model was created by the Geohydrological Specialist to determine the distance that pollution will travel in the underground water regime as a result of the Balgray project. The predicted 2D mass transport ZOI at 100 year after Life of Mine, is shown in **Figure 3**. From the ZOI generated, the following is noted:

- The 250 mg/l and 500 mg/l SO₄ contours remain in close proximity to the mining infrastructure;
- The 250 mg/l and 500 mg/l SO₄ contours do not intercept major rivers.

The fountain in question falls outside the Zone of Influence with regards to the migration of pollution as a result of the mining operations and is unlikely to be affected. It should also be noted that springs in the area are situated approximately 60 to 100 m above the coal seam,

and likely originate from the dolerite sill overlying the proposed Balgray section. In context this means that even if the spring falls within the ZOI, poor quality seepage at these springs is highly unlikely.

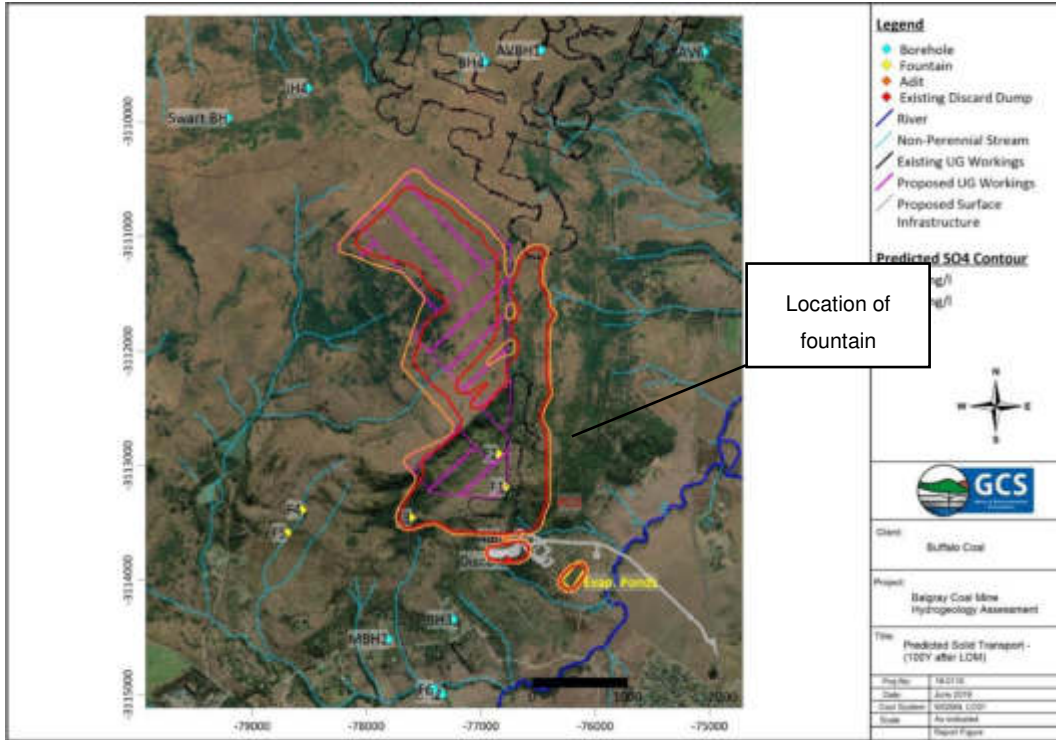


Figure 3: Predicted sulphate plume 100 year after Life of Mine

2. Comments regarding air quality

Comment:

Furthermore, we are also concerned regarding the dust caused by trucks as the hauling road has already been scraped on the farms boundary and as such the dust will have a detrimental impact on the grazing capacity of the farm which in return will also affect the property's value

Response:

An Air Quality Impact Assessment was conducted by Agreeco (2019) to determine the potential air quality related impacts associated with the proposed project. A model was created to determine the potential dust fall associated with the activities. It should be noted that the model shows the worst-case scenario without the application of mitigation measures. The National Dust Control Regulations (NDCR) standards for acceptable dust fallout rates are 600 mg/m²/day for residential areas and 1 200 mg/m²/day for non-residential areas.

Figure 4 shows the modelled dust fallout for the site on a daily average (24-hr). The results show no exceedances in residential and non-residential areas. The maximum dust fallout value to be reached according the air dispersion model is 488 mg/m²/day, which is well below the acceptable limits prescribed by the NDCR for residential areas.

Figure 5 show the highest dust fallout for the site on a monthly average. According to the air dispersion model the maximum dust fallout value to be reached is 7 187 mg/m²/month. These values divided by 30 (or the amount of monitoring days in the month) is equal to 240 mg/m²/day, which is well below the acceptable limits prescribed by the NDCR for residential areas.

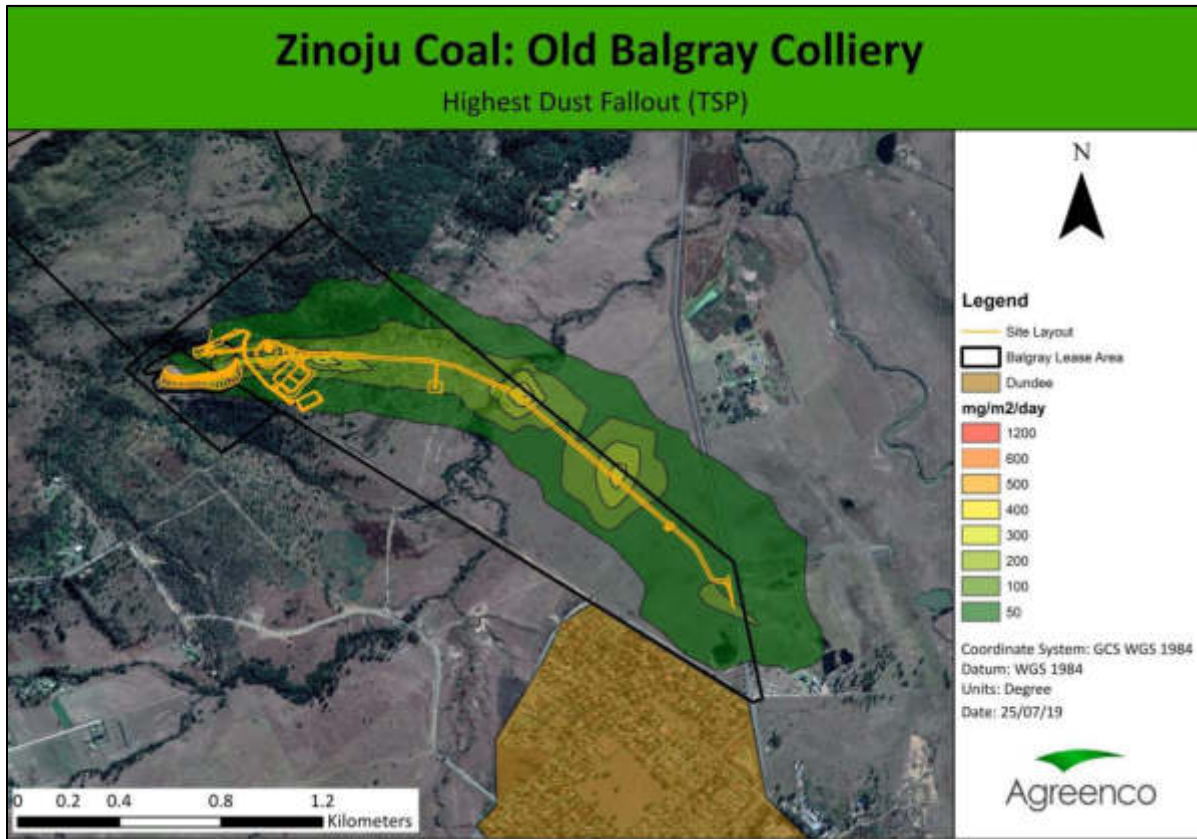


Figure 4: The highest expected dust fallout per day

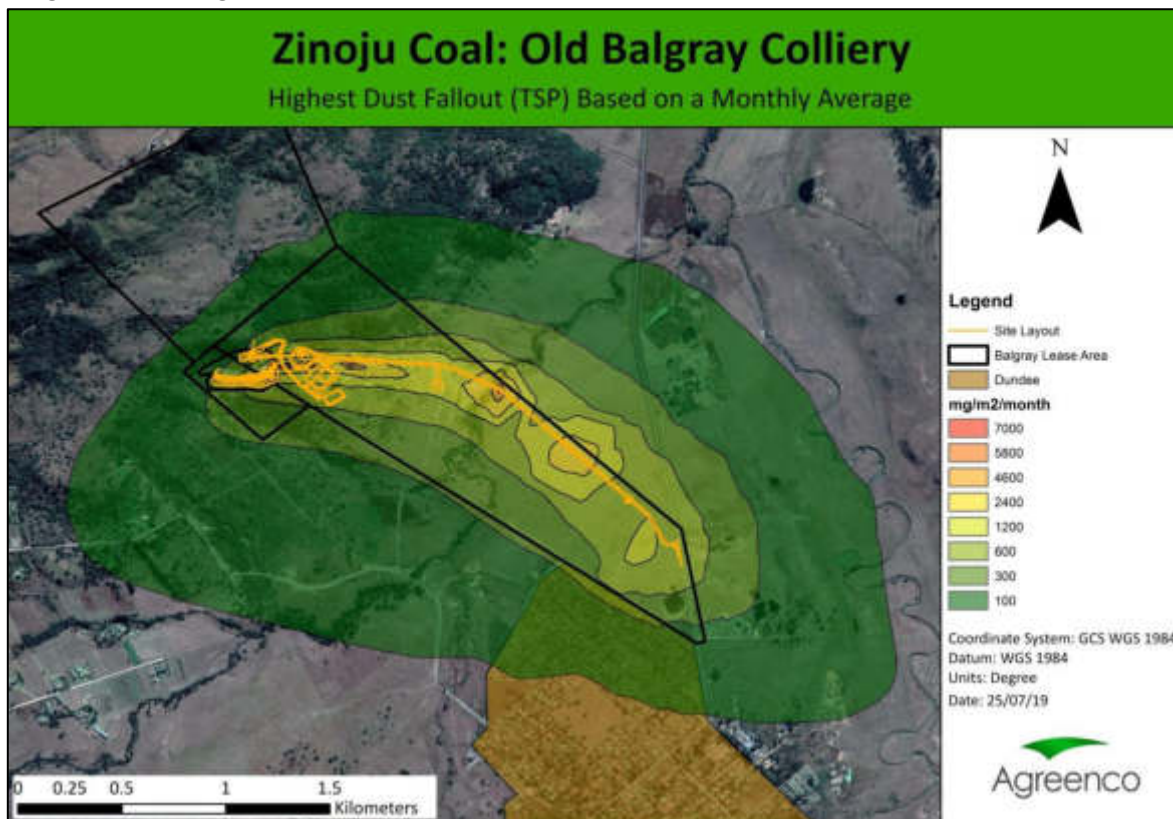


Figure 5: The highest dust fallout for the site on a monthly average

Mitigation measures to minimise dust fall are as follows:**Construction**

- Removal of vegetation must be avoided until such time as it is required and exposed surfaces must be stabilised as soon as practically possible.
- Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants.
- Constructing the road close to the access gate should be avoided in high wind speed conditions or when a visible dust plume is present.
- Enforce strict speed limit, i.e. 30km/h.
- Conduct Dust Fall Monitoring in terms of the National Dust Control Regulations and management of the site according to the measures prescribed in the NDCR 2019.

Operations

- An irrigation system at the material loading areas can be installed to prevent dust liberation from the operations.
- Prevent spillage from the conveyor belt by regulating the amount of material and feeding the material to the centre of the belt. The belt should be covered by skirting to prevent wind entrained dust.
- Coal spillages must be cleaned appropriately.
- Maintain high moisture content on exposed surface and roads by spraying with water or applying dust retardants
- Enforce strict speed limit, i.e. 30km/h.
- Trucks should be covered to avoid wind blowing the material away and spillage on the road surface.

3. Comments regarding safety**Comment:**

We are also concerned for safety as a mine attracts unwanted attention, how will this be mitigated?

Response:

The mitigation proposed in the Environmental Management Programme regarding impacts related to safety are as follows:

- Manage recruitment process to control expectations and unnecessary in-migration.
- Implement controlled access to project site and monitor activity in immediate surrounding sites/area.
- Set up local community safety forum.
- Maintain contact with major community stakeholders.

4. Comments regarding river crossing**Comment:**

It is my understanding that the access route will be crossing a river which has previously been dammed up without our knowledge and was washed away with one of the storms. Will the river be dammed up again or how will our farm be affected?

Response:

A river crossing will be established across the Streskstroom river on the access road according to engineering designs that will allow for the flow of water underneath. A Water Use Licence (WUL) application is conducted to establish the river crossing. The river will not be dammed up as part of the project.

5. Comments regarding borrow pit**Comment:**

On a previous occasion a contractor also used the area as a borrow pit and excavated material on our property without any prior consent. We would like to ensure no such events occur in future and that our fence lines will remain intact and on their correct positions at all times.

Response:

A borrow pit/s will be established on the site to source material for construction purposes and is included in the environmental authorisation process. The Basic Impact Assessment Report will contain the site layout which will show the location of all the infrastructure, including the borrow pit/s. The borrow pit/s will be located on the property on which the proposed infrastructure will be established according to the layout plans provided by the Applicant.

Please inform me if you require any additional information. All reports will be made available for comment during the formal public participation process.

From: mdumela@9zeroseven.com
To: [Trevor Hallatt](#)
Subject: Environmental Authorisation: Balgray Adit
Date: Friday, 06 September 2019 11:50:56
Attachments: [image001.png](#)
[image002.png](#)

Hi Trevor,

I just received a message with regards to the abovementioned project.

Could I kindly ask for the BID and any plans you may have of the area to be affected?

We are based right by the Mpathi Mountain, I believe will be the entry point.

Thanks

Regards,

Ndumiso Dlamini (Pr. Sci. Nat)

**Senior Environmental Planner
Ecological Sciences**

+27 71 343 1503
mdumela@9zeroseven.com

From: [Trevor Hallatt](#)
To: mdumela@9zeroseven.com
Subject: RE: Environmental Authorisation: Balgray Adit
Date: Friday, 06 September 2019 11:59:00
Attachments: [Zinoju Coal Environmental Authorisation BID_Final.pdf](#)
[image001.png](#)
[image003.png](#)

Hi Ndumiso,

Please find attached the BID for the project which contains the location as well as the conceptual layout plan. The entry point will be on the southern side of the mountain, north of Dundee.

The BAR and specialist studies are being developed and the I&APs will be notified when it will be available for review.

Kind regards
Trevor

From: mdumela@9zeroseven.com <mdumela@9zeroseven.com>
Sent: Friday, 06 September 2019 11:50
To: Trevor Hallatt <trevor@exm.co.za>
Subject: Environmental Authorisation: Balgray Adit

Hi Trevor,

I just received a message with regards to the abovementioned project.

Could I kindly ask for the BID and any plans you may have of the area to be affected?

We are based right by the Mpathi Mountain, I believe will be the entry point.

Thanks

Regards,

Ndumiso Dlamini (Pr. Sci. Nat)

Senior Environmental Planner
Ecological Sciences

+27 71 343 1503
mdumela@9zeroseven.com

From: [Trevor Hallatt](#)
To: [Willie Faber](#)
Subject: FW: Old Balgray Colliery Re-Commissioning project
Date: Wednesday, 25 September 2019 10:02:00

-----Original Message-----

From: Talana Museum <info@talana.co.za>
Sent: Friday, 30 August 2019 14:24
To: Trevor Hallatt <trevor@exm.co.za>
Subject: Old Balgray Colliery Re-Commissioning project

Kindly register us as an interested party.

Not sure if you are aware but Talana museum is the government accredited archive depot for all KZN coal mining material.

Pam McFadden

Curator

Talana Museum, Battlefield and Heritage Park

e-mail: info@talana.co.za <<mailto:info@talana.co.za>> www.talana.co.za <<http://www.talana.co.za/>>

facebook: [talanamuseum](#) Tel 034 2122654

Open weekdays 8:00 -16:30 Weekends and public holidays 9:00 -16:30.

Closed 25,26 December only.

From: claims@jmitchell.co.za
To: [Trevor Hallatt](#)
Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Tuesday, 15 October 2019 12:14:11
Attachments: [image002.png](#)

Hi Trevor


We have not received any notification of a meeting as yet. Please advise when this will take place as I have numerous concerns.

Kind Regards



Nandi Zaloumis-Mitchell

BCom Man Acc (UNISA)
Adv. Diploma Fin Acc (UNISA)
Dundee, KZN, South Africa
claims@jmitchell.co.za
[+27 83 293 2133](tel:+27832932133)
Loss Adjusters, Non-Motor Assessors,
Commercial Vehicle Assessors,
Investigators, Surveyors

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From: Trevor Hallatt <trevor@exm.co.za>

Sent: 06 September 2019 12:52

To: fin@dundeejs.co.za; mike.h@andersonusgt.co.za; kdejager@kznatal.co.za; Ischroed@kuz.co.za; ncs@trustnet.co.za; green@gmj.co.za; green@gmj.co.za; beth.toadhill@gmail.com; fin@dundeejs.co.za; anton@aft.bz; FAHRANAROTOL@gmail.com; pressou03@gmail.com; jobelihlesthole@gmail.com; wendyabraham13@gmail.com; HMNPZDS@gmail.com; clivemordaunt@gmail.com; rokruger@yahoo.co.uk; attiedelange0@gmail.com; mdumela@9zeroseven.com; carienn4@gmail.com; johannvandermerwe@vodamail.co.za; shanesimm@gmail.com; claims@jmitchell.co.za; marcp@dreykon.co.za; bhekizitha59@gmail.com; hlengiwe21551@icloud.com; Janet@tinky.co.za; Janet@tinky.co.za; ALETH@trustnet.co.za; beth.toadhill@gmail.com

Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

From: [Trevor Hallatt](mailto:Trevor.Hallatt@jtmitchell.co.za)
To: claims@jtmitchell.co.za
Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Tuesday, 15 October 2019 12:17:00
Attachments: [image005.png](#)

Good day,

The specialist studies have not been finalised as yet. We will provide all reports to the public for comment once it has been finalised. Thereafter, a date for the public meeting will be communicated to all relevant parties. We expect it to be in the middle of November, but it is dependent on when all the reports can be finalised.

Kind regards

Trevor

From: claims@jtmitchell.co.za <claims@jtmitchell.co.za>
Sent: Tuesday, 15 October 2019 12:14
To: Trevor Hallatt <trevor@exm.co.za>
Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application

Hi Trevor

We have not received any notification of a meeting as yet. Please advise when this will take place as I have numerous concerns.

Kind Regards



Nandi Zaloumis-Mitchell

BCom Man Acc (UNISA)
Adv. Diploma Fin Acc (UNISA)
Dundee, KZN, South Africa
claims@jtmitchell.co.za
[+27 83 293 2133](tel:+27832932133)
Loss Adjusters, Non-Motor Assessors,
Commercial Vehicle Assessors,
Investigators, Surveyors

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From: Trevor Hallatt <trevor@exm.co.za>
Sent: 06 September 2019 12:52

To: fin@dundeejs.co.za; mike.h@andersonusgt.co.za; kdejager@kznatal.co.za; lschroed@kuz.co.za; ncs@trustnet.co.za; green@gmj.co.za; green@gmj.co.za; beth.toadhill@gmail.com; fin@dundeejs.co.za; anton@aft.bz; FAHRANAROTOL@gmail.com; pressou03@gmail.com; jobelihlesthole@gmail.com; wendyabraham13@gmail.com; HMNPZDS@gmail.com; clivemordaunt@gmail.com; rokruger@yahoo.co.uk; attiedelange0@gmail.com; mdumela@9zeroseven.com; carienn4@gmail.com; johannvandermerwe@vodamail.co.za; shanesimm@gmail.com; claims@jmittchell.co.za; marcp@dreykon.co.za; bhekizitha59@gmail.com; hlengiwe21551@icloud.com; Janet@tinky.co.za; Janet@tinky.co.za; ALETH@trustnet.co.za; beth.toadhill@gmail.com

Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT NEAR DUNDEE, KWAZULU-NATAL

Zinoju Coal proposes to recommission the old Balgray colliery near Dundee in Kwazulu Natal in order to gain access and mine the underground coal reserves. EXM Advisory Services was appointed by Zinoju Coal as the Environmental Assessment Practitioner to conduct a Basic Environmental Impact Assessment (BA) and Water Use Licence (WUL) Application for the recommissioning of the Balgray Colliery in order to obtain an Environmental Authorisation (EA) for the project. A Public Participation Process is conducted in support of the BA and WUL application to inform the identified Interested and/or Affected Parties of the project and allow them to comment.

The relevant documentation is being developed and all registered I&APs will be provided access to comment on all reports (once finalized) in support of the BA and WUL application. A public meeting will also be conducted and the I&APs will be informed of the exact time and date thereof.

Please find attached a Background Information Document (BID) which contains information regarding the project and EA application process. If you wish to register as an I&AP, please send your name and contact information to the email or cell phone number below.

Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



TREVOR HALLATT
ENVIRONMENTAL SCIENTIST
MA ENVIRONMENTAL MANAGEMENT

T: +27 (0) 10 007 3617

M: +27 (0) 71 689 2229

W: WWW.EXM.CO.ZA

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From: claims@jmitchell.co.za
To: [Trevor Hallatt](#)
Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Thursday, 14 November 2019 10:22:38
Attachments: [image005.png](#)
[image002.png](#)


Thank you.

Kind Regards



Nandi Zaloumis-Mitchell

BCom Man Acc (UNISA)
Adv. Diploma Fin Acc (UNISA)
Dundee, KZN, South Africa
claims@jmitchell.co.za
[+27 83 293 2133](tel:+27832932133)
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From: Trevor Hallatt <trevor@exm.co.za>
Sent: 14 November 2019 10:17
To: claims@jmitchell.co.za
Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application

Good day,

Please note that you have been added as an interested party for the Basic Impact Assessment for proposed Refurbishment of the old Ballygarry adit. We will shortly commence with the formal public participation process and all documents will be made available for review. You will be notified as the process proceeds and when the public meeting will be.

Kind regards
Trevor

From: claims@jmitchell.co.za <claims@jmitchell.co.za>
Sent: Tuesday, 15 October 2019 12:14
To: Trevor Hallatt <trevor@exm.co.za>
Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application

Hi Trevor


We have not received any notification of a meeting as yet. Please advise when this will take place as I have numerous concerns.

Kind Regards



Nandi Zaloumis-Mitchell

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From: Trevor Hallatt <trevor@exm.co.za>

Sent: 06 September 2019 12:52

To: fin@dundeejs.co.za; mike.h@andersonusgt.co.za; kdejager@kznatal.co.za; lschroed@kuz.co.za; ncs@trustnet.co.za; green@gmj.co.za; green@gmj.co.za; beth.toadhill@gmail.com; fin@dundeejs.co.za; anton@aft.bz; FAHRANAROTOL@gmail.com; pressou03@gmail.com; jobelihlesthole@gmail.com; wendyabraham13@gmail.com; HMNPZDS@gmail.com; clivemordaunt@gmail.com; rokruger@yahoo.co.uk; attiedelange0@gmail.com; mdumela@9zeroseven.com; carienn4@gmail.com; johannvandermerwe@vodamail.co.za; shanesimm@gmail.com; claims@jmitchell.co.za; marcp@dreykon.co.za; bhekizitha59@gmail.com; hlengiwe21551@icloud.com; Janet@tinky.co.za; Janet@tinky.co.za; ALETH@trustnet.co.za; beth.toadhill@gmail.com

Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT NEAR DUNDEE, KWAZULU-NATAL

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Advisory Services was appointed by Zinoju Coal as the Environmental Assessment Practitioner to conduct a Basic Environmental Impact Assessment (BA) and Water Use Licence (WUL) Application for the recommissioning of the Balgray Colliery in order to obtain an Environmental Authorisation (EA) for the project. A Public Participation Process is conducted in support of the BA and WUL application to inform the identified Interested and/or Affected Parties of the project and allow them to comment.

The relevant documentation is being developed and all registered I&APs will be provided access to comment on all reports (once finalized) in support of the BA and WUL application. A public meeting will also be conducted and the I&APs will be informed of the exact time and date thereof.

Please find attached a Background Information Document (BID) which contains information regarding the project and EA application process. If you wish to register as an I&AP, please send your name and contact information to the email or cell phone number below.

Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor



TREVOR HALLATT
ENVIRONMENTAL SCIENTIST
MA ENVIRONMENTAL MANAGEMENT

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M: +27 (0) 71 689 2229

W: WWW.EXM.CO.ZA

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From: [Stean Jacobs](#)
To: [Trevor Hallatt](#)
Subject: Re: Balgray Refurbishment Project-Registration
Date: Monday, 18 November 2019 10:37:10

Good day Trevor.

I see that the construction of a dam has already commenced on the Balgray refurbishment project. I was under the impression that the Environmental authorizations were still being applied for?

When can we expect to be informed regarding the progress of the project? or alternatively be warned.

Best Regards
Stean Jacobs

On Tue, Sep 10, 2019 at 1:57 PM Stean Jacobs <steanjacobs@gmail.com> wrote:

Good day Trevor,

Please could you include me as an interested and affected party regarding the Balgray Refurbishment Project. We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm.

Furthermore we are also concerned regarding the dust caused by trucks as the hauling road has already been scraped on the farms boundary and as such the dust will have a detrimental impact on the grazing capacity of the farm which in return will also affect the properties value.

We are also concerned for safety as a mine attracts unwanted attention, how will this be mitigated?

It is my understanding that the access route will be crossing a river which has previously been dammed up without our knowledge and was washed away with one of the storms. Will the river be dammed up again or how will our farm be affected?

On a previous occasion a contractor also used the area as a borrow pit and excavated material on our property without any prior consent. We would like to ensure no such events occur in future and that our fence lines will remain in tact and on their correct positions at all times.

Kind Regards
Stean Jacobs
074 8999 455
Avoca Farm

From: [Steane Jacobs](#)
To: [Trevor Hallatt](#)
Subject: Re: Balgray Refurbishment Project-Registration
Date: Monday, 18 November 2019 10:39:58
Attachments: [image.png](#)



Here is an aerial photograph of the dam being constructed. There are already a number of excavators and construction equipment on site.

Best Regards
Steane Jacobs

On Tue, Sep 10, 2019 at 1:57 PM Steane Jacobs <steanejacobs@gmail.com> wrote:

Good day Trevor,

Please could you include me as an interested and affected party regarding the Balgray Refurbishment Project. We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm.

Furthermore we are also concerned regarding the dust caused by trucks as the hauling road has already been scraped on the farms boundary and as such the dust will have a detrimental impact on the grazing capacity of the farm which in return will also affect the properties value.

We are also concerned for safety as a mine attracts unwanted attention, how will this be mitigated?

It is my understanding that the access route will be crossing a river which has previously

been dammed up without our knowledge and was washed away with one of the storms. Will the river be dammed up again or how will our farm be affected?

On a previous occasion a contractor also used the area as a borrow pit and excavated material on our property without any prior consent. We would like to ensure no such events occur in future and that our fence lines will remain in tact and on their correct positions at all times.

Kind Regards
Stean Jacobs
074 8999 455
Avoca Farm

From: [Toger Haupt](#)
To: [Trevor Hallatt](#)
Cc: steanjacobs@gmail.com
Subject: FW: Register :- old Baigray Refurbishment project
Date: Monday, 18 November 2019 12:46:58

Good day Trevor

Attached please see the activities already being conducted on the "Balgray Farm". Is this in order as we have not been informed of anything final arrangements?

Please advise.

Kind Regards

Toger Haupt
Northern Cleaning Services
P O Box 1853
Newcastle 2940
18 Kirkland Street
Tel: 034 312 2051
Fax: 034 312 2054
Cell: 082 567 9091

From: Trevor Hallatt [mailto:trevor@exm.co.za]
Sent: 25 September 2019 06:47
To: Toger Haupt
Cc: steanjacobs@gmail.com; Lelanie Haupt
Subject: RE: Register :- old Baigray Refurbishment project

Good day Toger,

Thank you for the communication regarding the Balgray project. All I&APs will be informed as the Basic Impact Assessment process progresses and will have an opportunity to comment on the relevant documents, once finalised.

Kind regards

Trevor

From: Toger Haupt <togerhaupt@gmail.com>
Sent: Monday, 23 September 2019 11:23
To: Trevor Hallatt <trevor@exm.co.za>
Cc: steanjacobs@gmail.com; Lelanie Haupt <ncssalesrep@trustnet.co.za>
Subject: Register :- old Baigray Refurbishment project

Good day Trevor

As registered owners of Avoca farm –Property 28 – we hereby wish to be registered as an interested and affected party.

Beste groete/ Best regards,

Toger Haupt

Tel: 034 312 2051

Cell: 082 567 9091

Fax: 034 312 2054

Email: ncs@trustnet.co.za

togerhaupt@gmail.com

From: [Trevor Hallatt](mailto:Trevor.Hallatt@daff.gov.za)
To: PMBResourceCentre@daff.gov.za
Cc: ThembalakheS@daff.gov.za; AmkelaC@daff.gov.za
Subject: RE: DAFF Comments
Date: Wednesday, 20 November 2019 11:29:00
Attachments: [BID Old Balgray Colliery Farm Impati North West of Dundee.pdf](#)
[image001.png](#)

Good day,

Your attached comments regarding the refurbishment of the Old Balgray Colliery holds reference. Please note that we are in the process to finalise the relevant documents (BAR, IWWMP and Specialist Studies) as part of the application process. Relevant specialist studies including fauna, flora and aquatic assessments have been undertaken. I have added you to the list of registered I&APs. All the documentation once finalised will be communicated to the I&APs for comment. Please do not hesitate to contact me if you require additional information.

Kind regards
Trevor

From: PMB ResourceCentre <PMBResourceCentre@daff.gov.za>
Sent: 20 September 2019 09:27
To: Kerry Fairley <kerry@exm.co.za>
Cc: Thembalakhe Sibozana <ThembalakheS@daff.gov.za>; Amkela A.S. Chiya <AmkelaC@daff.gov.za>
Subject: DAFF Comments

Good morning,

Please find attached.

Should you have any queries, please do not hesitate to contact Thembalakhe on 033 392 7721 or ThembalakheS@daff.gov.za.

Regards,

PMB Resource Centre

Sub Directorate: Forestry Regulations & Support
Department of Agriculture, Forestry and Fisheries

Tel: 033 392 7700
Fax: 033 342 8783
Web: www.daff.gov.za
E-mail: PMBResourceCentre@daff.gov.za

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From: [Trevor Hallatt](#)
To: [Toger Haupt](#)
Cc: steanjacobs@gmail.com
Subject: RE: Register :- old Baigray Refurbishment project
Date: Wednesday, 20 November 2019 16:50:00

Good day,

Thank you for your comments regarding the Balgray refurbishment project. I will provide clarification regarding the activities tomorrow.

Kind regards
Trevor

From: Toger Haupt <togerhaupt@gmail.com>
Sent: Monday, 18 November 2019 12:45
To: Trevor Hallatt <trevor@exm.co.za>
Cc: steanjacobs@gmail.com
Subject: FW: Register :- old Baigray Refurbishment project

Good day Trevor

Attached please see the activities already being conducted on the "Balgray Farm". Is this in order as we have not been informed of anything final arrangements?

Please advise.

Kind Regards

Toger Haupt
Northern Cleaning Services
P O Box 1853
Newcastle 2940
18 Kirkland Street
Tel: 034 312 2051
Fax: 034 312 2054
Cell: 082 567 9091

From: Trevor Hallatt [<mailto:trevor@exm.co.za>]
Sent: 25 September 2019 06:47
To: Toger Haupt
Cc: steanjacobs@gmail.com; Lelanie Haupt
Subject: RE: Register :- old Baigray Refurbishment project

Good day Toger,

Thank you for the communication regarding the Balgray project. All I&APs will be informed as the Basic Impact Assessment process progresses and will have an opportunity to comment on the relevant documents, once finalised.

Kind regards
Trevor

From: Toger Haupt <togerhaupt@gmail.com>
Sent: Monday, 23 September 2019 11:23
To: Trevor Hallatt <trevor@exm.co.za>
Cc: steanjacobs@gmail.com; Lelanie Haupt <ncssalesrep@trustnet.co.za>
Subject: Register :- old Baigray Refurbishment project

Good day Trevor

As registered owners of Avoca farm –Property 28 – we hereby wish to be registered as an interested and affected party.

Beste groete/ Best regards,

Toger Haupt
Tel: 034 312 2051
Cell: 082 567 9091
Fax: 034 312 2054
Email: ncs@trustnet.co.za
togerhaupt@gmail.com

From: [Trevor Hallatt](#)
To: steanjacobs@gmail.com; [Toger Haupt](#)
Subject: Balgray Refurbishment Project
Date: Friday, 22 November 2019 09:41:00

Good day,

Please refer to the reply from the Applicant below regarding the activities currently undertaken on-site. Please feel free to contact me at any stage if you would like clarification.

Kind regards
Trevor

Reply from Applicant (Zinoju Coal):

The owner of the farm on which the activity is taking place is owned by Guy Slater. This being the Farm Craigside No 2272 PTN 116.

Should a Mining Right be granted a Portion of the Farm, Craigside PTN 116, will be used for mine access and the required surface infrastructure.

Due to the possible approval of the Mining Right , Buffalo Coal and Zinoju Coal have negotiated a Memorandum of Undertaking together with the Land owner setting out the terms and conditions should the Mining go ahead.

As a result Mr G Salter has been aware of the various specialist studies that have taken place on his farm including the search for optimal material to be used for the road and other types of construction that may take place should approval be granted for the mining project. The agreement includes common access onto the property.

In conversation Mr Slater mentioned that he needed material for infill material that would be required for his planned development of his property.

On conclusion Mr Slater mentioned that he would possibly take samples to send off to his engineers to verify that the material was suitable for the designated use.

Any digging or activity at that site has been done in his private capacity as land owner and does not involve Buffalo Coal or Zinoju Coal in any way.

Zinoju Coal (PTY) LTD will not start any activity without the required authorizations.

Trust that this has met with your requirements.

Regards,

Frank Talbot



From: Stean Jacobs <steanjacobs@gmail.com>
Sent: Monday, 18 November 2019 10:35
To: Trevor Hallatt <trevor@exm.co.za>
Subject: Re: Balgray Refurbishment Project-Registration

Good day Trevor.

I see that the construction of a dam has already commenced on the Balgray refurbishment project. I was under the impression that the Environmental authorizations were still being applied for?

When can we expect to be informed regarding the progress of the project? or alternatively be warned.

Best Regards
Stean Jacobs

On Tue, Sep 10, 2019 at 1:57 PM Stean Jacobs <steanjacobs@gmail.com> wrote:

Good day Trevor,

Please could you include me as an interested and affected party regarding the Balgray Refurbishment Project. We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm.

Furthermore we are also concerned regarding the dust caused by trucks as the hauling road has already been scraped on the farms boundary and as such the dust will have a detrimental impact on the grazing capacity of the farm which in return will also affect the properties value.

We are also concerned for safety as a mine attracts unwanted attention, how will this be mitigated?

It is my understanding that the access route will be crossing a river which has previously been dammed up without our knowledge and was washed away with one of the storms. Will the river be dammed up again or how will our farm be affected?

On a previous occasion a contractor also used the area as a borrow pit and excavated material on our property without any prior consent. We would like to ensure no such events occur in future and that our fence lines will remain in tact and on their correct positions at all times.

Kind Regards
Stean Jacobs
074 8999 455
Avoca Farm

From: [Trevor Hallatt](#)
To: [Stean Jacobs](#)
Cc: [Toger Haupt](#); [Lelanie Haupt](#)
Subject: RE: Balgray Refurbishment Project-Registration
Date: Friday, 22 November 2019 14:53:00

Good day,

Can you please provide the precise location of your fountains in order for me to provide a correct reply to the concern below.

Kind regards
Trevor

From: Stean Jacobs <steanjacobs@gmail.com>
Sent: Tuesday, 10 September 2019 13:58
To: Trevor Hallatt <trevor@exm.co.za>
Cc: Toger Haupt <togerhaupt@gmail.com>; Lelanie Haupt <lelaniehaupt@gmail.com>
Subject: Balgray Refurbishment Project-Registration

Good day Trevor,

Please could you include me as an interested and affected party regarding the Balgray Refurbishment Project. We are extremely concerned as to how this would affect our water fountains as this is our main water supply and the proposed mine lies adjacent to our farm.

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Kind Regards
Stean Jacobs
074 8999 455
Avoca Farm

From: [Marc Purcell](#)
To: [Trevor Hallatt](#)
Subject: Refurbishment of the old Balfargy adit
Date: Thursday, 05 September 2019 13:24:22

Afternoon Trevor

I would like to register as an interested party regarding the refurbishment of the old Balfargy adit and receive information as the application proceeds.

Cell:079 847 7343

Physical address: 35 McPhail Drive

Email: marcp@dreykon.co.za

Regards

Marc

From: [Trevor Hallatt](#)
To: [Marc Purcell](#)
Subject: RE: Refurbishment of the old Balgary adit
Date: Thursday, 14 November 2019 10:12:00

Good day,

Please note that you have been added as an interested party for the proposed Refurbishment of the old Balgary adit. We will shortly commence with the formal public participation process and all documents will be made available for review. You will be notified as the process proceeds.

Kind regards
Trevor

-----Original Message-----

From: Marc Purcell <marcp@dreykon.co.za>
Sent: Thursday, 05 September 2019 13:24
To: Trevor Hallatt <trevor@exm.co.za>
Subject: Refurbishment of the old Balgary adit

Afternoon Trevor

I would like to register as an interested party regarding the refurbishment of the old Balgary adit and receive information as the application proceeds.

Cell:079 847 7343
Physical address: 35 McPhail Drive
Email: marcp@dreykon.co.za

Regards
Marc

From: claims@jmitchell.co.za
To: [Trevor Hallatt](#)
Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application
Date: Wednesday, 18 December 2019 16:55:09
Attachments: [image003.png](#)

Thank you for the quick reply!

Kind Regards



Nandi Zaloumis-Mitchell

BCom Man Acc (UNISA)
Adv. Diploma Fin Acc (UNISA)
Dundee, KZN, South Africa
claims@jmitchell.co.za
[+27 83 293 2133](tel:+27832932133)
Loss Adjusters, Non-Motor Assessors,
Commercial Vehicle Assessors,
Investigators, Surveyors

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From: Trevor Hallatt <trevor@exm.co.za>
Sent: 18 December 2019 14:58
To: claims@jmitchell.co.za
Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application

Good day,

Please refer to the below response from the applicant regarding your comment. The date of the meeting will be communicated early January 2020.

Kind regards
Trevor

On 18 Dec 2019, at 14:32, Frank Talbot <frank.talbot@buffalocoal.co.za> wrote:

Hi,
This does not have anything to do with Zinoju. We are not doing anything in the area. As far as I am aware the land owner has stopped all his operations for

Christmas from the 13th Dec as is Zinoju from the 20 - 6 th Jan.
Zinoju closest is the operating mine at Aviemore.
I am not at work, back on 6th will investigate and come back should I gain some info.
Regards
Frank

Sent from my iPhone

From: Frank Talbot <frank.talbot@buffalocoal.co.za>
Sent: Wednesday, 18 December 2019 14:40
To: Trevor Hallatt <trevor@exm.co.za>
Subject: Re: Public Notification - Basic Impact Assessment and Water Use Licence Application

Hi ,
Just spoken to a resident very close to Balgray. Confirmed that he is unaware of any workings but there has been a-lot of banditry in the area and so residents are leaving a lot of lights on with possible patrolling.
Any thing new I will infirm you all.
Regards
Frank

Sent from my iPhone

On 18 Dec 2019, at 13:48, Trevor Hallatt <trevor@exm.co.za> wrote:

Hi Frank and Dawid,

Please refer to the below email from one of the I&Aps.

Regards
Trevor

From: claims@jmitchell.co.za <claims@jmitchell.co.za>
Sent: Wednesday, 18 December 2019 13:38
To: Trevor Hallatt <trevor@exm.co.za>
Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application

Hi Trevor

Please advise what is happening. I see allot of activity in that area including the use of large amounts of lights.

When will this meeting take place?


Kind Regards

<image001.png>

Nandi Zaloumis-Mitchell

BCom Man Acc (UNISA)
Adv. Diploma Fin Acc (UNISA)
Dundee, KZN, South Africa
claims@jmitchell.co.za
+27 83 293 2133
Loss Adjusters, Non-Motor
Assessors, Commercial Vehicle
Assessors, Investigators,
Surveyors

<image003.jpg>

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From: Trevor Hallatt <trevor@exm.co.za>

Sent: 14 November 2019 10:17

To: claims@jmitchell.co.za

Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application

Good day,

Please note that you have been added as an interested party for the Basic Impact Assessment for proposed Refurbishment of the old Balgary adit. We will shortly commence with the formal public participation process and all documents will be made available for review. You will be notified as the process proceeds and when the public meeting will be.

Kind regards

Trevor

From: claims@jmitchell.co.za <claims@jmitchell.co.za>

Sent: Tuesday, 15 October 2019 12:14

To: Trevor Hallatt <trevor@exm.co.za>

Subject: RE: Public Notification - Basic Impact Assessment and Water Use Licence Application

Hi Trevor

We have not received any notification of a meeting as yet. Please advise when this will take place as I have numerous concerns.


Kind Regards

<image005.png>

Nandi Zaloumis-Mitchell

BCom Man Acc (UNISA)
Adv. Diploma Fin Acc (UNISA)
Dundee, KZN, South Africa
claims@jmittchell.co.za
+27 83 293 2133
Loss Adjusters, Non-Motor
Assessors, Commercial Vehicle
Assessors, Investigators,
Surveyors

<image003.jpg>

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From: Trevor Hallatt <trevor@exm.co.za>

Sent: 06 September 2019 12:52

To: fin@dundeejs.co.za; mike.h@andersonusgt.co.za;
kdejager@kznatal.co.za; lschroed@kuz.co.za; ncs@trustnet.co.za;
green@gmj.co.za; green@gmj.co.za; beth.toadhill@gmail.com;
fin@dundeejs.co.za; anton@aft.bz; FAHRANAROTOL@gmail.com;
pressou03@gmail.com; jobelihlesthole@gmail.com;
wendyabraham13@gmail.com; HMNPZDS@gmail.com;
clivemordaunt@gmail.com; rokruger@yahoo.co.uk;
attiedelange0@gmail.com; mdumela@9zeroseven.com;
carienn4@gmail.com; johannvandermerwe@vodamail.co.za;
shanesimm@gmail.com; claims@jmittchell.co.za;
marcp@dreykon.co.za; bhekizitha59@gmail.com;
hlengiwe21551@icloud.com; Janet@tinky.co.za; Janet@tinky.co.za;
ALETH@trustnet.co.za; beth.toadhill@gmail.com

Subject: Public Notification - Basic Impact Assessment and Water Use Licence Application

ATTENTION: INTERESTED AND AFFECTED PARTY / COMMENTING AUTHORITY

ZINOJU COAL (PTY) LTD

OLD BALGRAY COLLIERY: ADIT RECOMMISSIONING PROJECT NEAR DUNDEE, KWAZULU- NATAL

Zinoju Coal proposes to recommission the old Balgray colliery near Dundee in Kwazulu Natal in order to gain access and mine the underground coal reserves. EXM Advisory Services was appointed by Zinoju Coal as the

Environmental Assessment Practitioner to conduct a Basic Environmental Impact Assessment (BA) and Water Use Licence (WUL) Application for the recommissioning of the Balgray Colliery in order to obtain an Environmental Authorisation (EA) for the project. A Public Participation Process is conducted in support of the BA and WUL application to inform the identified Interested and/or Affected Parties of the project and allow them to comment.

The relevant documentation is being developed and all registered I&APs will be provided access to comment on all reports (once finalized) in support of the BA and WUL application. A public meeting will also be conducted and the I&APs will be informed of the exact time and date thereof.

Please find attached a Background Information Document (BID) which contains information regarding the project and EA application process. If you wish to register as an I&AP, please send your name and contact information to the email or cell phone number below.

Contact person: Trevor Hallatt

Cell phone nr: 071 689 2229

Email: trevor@exm.co.za

Kind regards

Trevor

<image006.jpg>

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