



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

**BASIC ASSESSMENT REPORT
AND
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

**THE PROPOSED DIAMONDS ALLUVIAL & DIAMONDS
GENERAL MINING PERMIT NEAR WINDSORTON ON A
CERTAIN PORTION OF 5 HECTARES ON PORTION 7 (OSKAMP)
OF THE FARM SLYPKLIP SOUTH ESTATE 36; REGISTRATION
DIVISION: KIMBERLEY RD, NORTHERN CAPE PROVINCE**

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS 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	Rietput Delwery CC
PREPARED BY	MILNEX 189 CC
TEL NO	(018) 011 1925
FAX NO	087 231 7021
POSTAL ADDRESS:	P.O. Box 1086, Schweizer-Reneke, 2780
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FILE REFERENCE NUMBER SAMRAD:	NC30/5/1/3/2/10529MP

1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

2. Objective of the basic assessment process

The objective of the basic assessment process is to, through a consultative process—

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

(b) identify the alternatives considered, including the activity, location, and technology alternatives;

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:

(i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and

(ii) the degree to which these impacts—

(aa) can be reversed;

(bb) may cause irreplaceable loss of resources; and

(cc) can be managed, avoided or mitigated;

(e) through a ranking of the site sensitivities and possible impacts the activity and technology

alternatives will impose on the sites and location identified through the life of the activity to—

(i) identify and motivate a preferred site, activity and technology alternative;

(ii) identify suitable measures to manage, avoid or mitigate identified impacts; and

(iii) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSSSMENT AND BASIC ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: Danie Labuschagne

Tel No.: (018) 011 1925

Fax No. : (053) 963 2009

e-mail address: danie@milnex-sa.co.za

Name of Practitioner: Percy Sehaole

Tel No.: (018) 011 1925

Fax No. : (053) 963 2009

e-mail address: percy@milnex-sa.co.za

ii) Expertise of the EAP.

(1) The qualifications of the EAP

(with evidence).

Danie Labuschagne holds a Master's Degree in Environmental Management and Geography (refer to **Appendix 1**)

Percy Sehaole holds a Master's Degree in Environmental Science (refer to **Appendix 1**)

(2) Summary of the EAP's past experience.

(Attach the EAP's curriculum vitae as **Appendix 2**)

Milnex 189 CC was contracted by Rietput Delwery CC as the independent environmental consultant to undertake the Basic Assessment process for a Mining permit of Diamonds Alluvial and Diamonds General near Windsorton on a certain portion of 5 hectares on Portion 7 (Oskamp) of the farm Slypklip South Estate 36; Registration Division: Kimberley RD, Northern Cape Province. Milnex 189 CC does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Milnex 189 CC is a specialist environmental consultancy with extensive experience in the mining industry which provides a holistic environmental management service, including environmental assessment and planning to ensure compliance with relevant environmental legislation. Milnex 189 CC benefits from the pooled resources, diverse skills and experience in the environmental and mining field held by its team that has been actively involved in undertaking environmental studies for a wide variety of mining related

projects throughout South Africa. The Milnex 189 CC team has considerable experience in environmental impact assessment and environmental management, especially in the mining industry.

Danie Labuschagne & Percy Sehaole have experience consulting in the environmental field. Their key focus is on environmental assessment, advice and management and ensuring compliance to legislation and guidelines. They are currently involved in undertaking EIAs for several projects across the country (refer to **Appendix 2** for CV)

b) Location of the overall Activity.

Farm Name:	Certain portion of 5 hectares on portion 7 of the farm Slypklip South Estate 36
Application area (Ha)	5 Ha
Magisterial district:	Kimberley RD
Distance and direction from nearest town	12.6 km south of the town of Windsorton
21 digit Surveyor General Code for each farm portion	C03700000000003600007

c) Locality map (Show nearest town, scale not smaller than 1:250000).

A Locality map is attached in **Appendix 3** and figure 1 below.

Coordinates:

Farm	Latitude	Longitude
Certain portion of 5 hectares on portion 7 of the farm Slypklip South Estate 36	28°26'35.30"S	24°43'59.56"E
	28°26'38.51"S	24°43'51.64"E
	28°26'44.81"S	24°43'53.18"E
	28°26'42.12"S	24°44'1.76"E

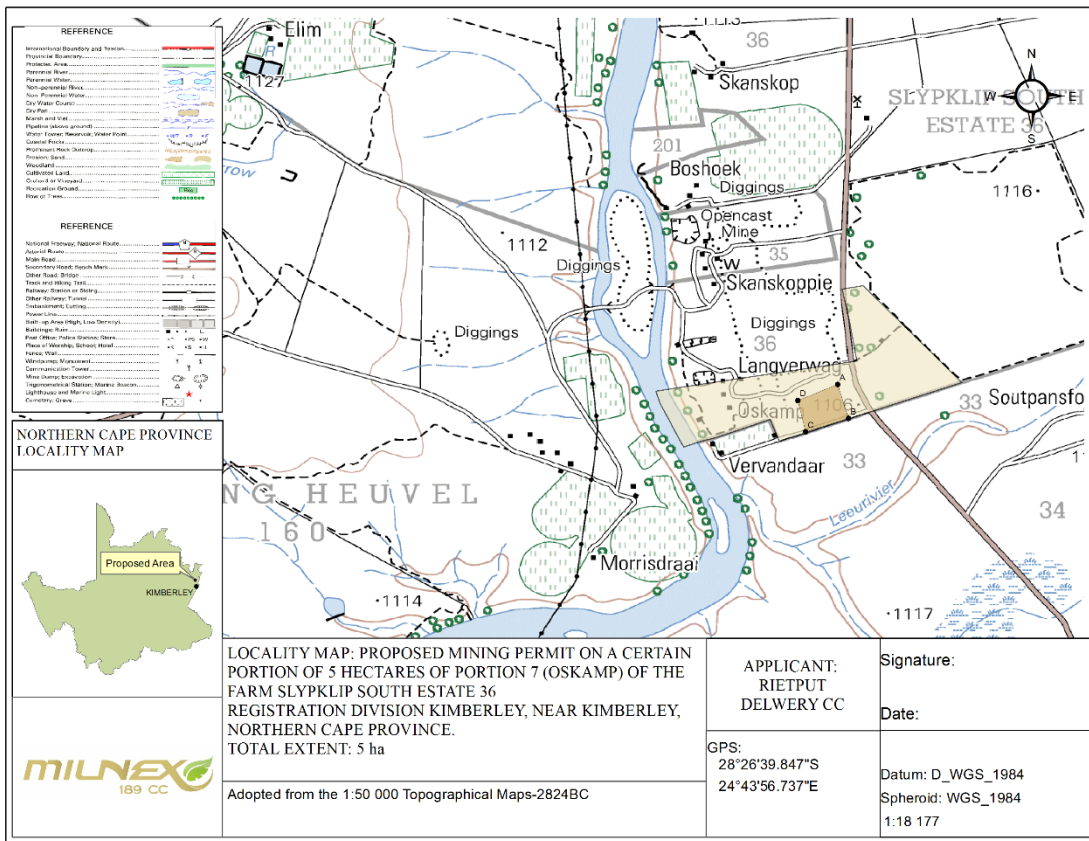


Figure 1: Locality map

d) Description of the scope of the proposed overall activity.

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site

Refer to Site Plan included within **Appendix 4** and figure 2 below.

<p>Description of the overall activity. (Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)</p>	<p>1. Listing Notice GNR 983, Activity 27: "The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation." - The clearance of 5 hectares of indigenous vegetation.</p> <p>2. Listing Notice GNR 983, Activity 21 : "Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 Of 2002), including associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource." - Mining Permit for the removal of Diamond alluvial Diamonds General, including associated infrastructure, structures and earthworks.</p>
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(ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

Rietput Delwery CC has embarked on a process for applying for a mining permit near Windsorton on a certain portion of 5 hectares on Portion 7 (Oskamp) of the farm Slypklip South Estate 36; Registration Division: Kimberley RD, Northern Cape Province. Rietput Delwery CC requires a mining permit in terms of NEMA and the Mineral and Petroleum Resources Development Act to mine diamonds alluvial and diamonds general on a certain area of 5Ha certain portion of Portion 7 (Oskamp) of the farm Slypklip South Estate 36; Registration Division: Kimberley RD, Northern Cape Province. (refer to a locality map attached in **Appendix 3**).

The alluvial diamond mining methodology:

The process of alluvial diamond mining involves digging and sifting through mud, sand and gravel. Typically, diamonds come from geologic rock formations called Kimberlites. Kimberlite rock formations that contain diamonds are eroded over time by rivers and streams and can deposit diamonds in the sediments carried by those streams farther downstream from the original source rocks. These deposits are called alluvial diamond deposits. The locations of these alluvial diamond deposits are controlled by the surrounding topography, drainage patterns, and the location of the Kimberlites themselves.

Vegetation clearance takes place first from where stripping and stockpiling of topsoil. All topsoil (irrespective of depth) is stripped separately with an excavator and frond-end loader and stockpiled next to the first pit. The topsoil will be stored in such a way that the minimum runoff and erosion will emanate from it. The topsoil will be stored in a pile; around the pile surface runoff trenches will be constructed to divert any runoff around the pile. The topsoil will be used for final rehabilitation when mining has reached its end of life span. Concurrent rehabilitation will also be done.

Alluvial mining requires a considerable amount of material (called the 'over-burden') to be removed first to get to the gravel bed underneath, where diamonds are found. Once the topsoil has been removed the overburden then stripped and placed adjacent the excavation.

Once the overburden has been removed the exposed diamondiferous gravel is stripped with an excavator and stockpiled on the side on the excavation and from where frond-end loaders haul it to the mineral processing plant, as needed (different location than excavations).

At the plant the gravel is fed into the primary conveyer by frond-end loaders. The gravel is fed by the conveyer into the rotating pans.

The total amount of water used for processing is between 10 000 and 18 000 litres an hour, depending on the size of the pan, of which 50% will be re-circulated from the open excavations in which the wet puddle is flowing and 50% is added by means of fresh water. The concentrate out of the pans goes directly into the steels bins that are sorted for final recovery on site.

The wet waste tailings coming out of the pans is pumped to open excavations and slimes dam, from where excess water is re-cycled.

For backfilling and rehabilitation the following procedures will be as follow:

The coarse gravel (rough) sifted from the pans will be transported back by frond-end loaders towards all open pits for backfilling. During backfilling variation in the dumping sequence of materials will be followed to obtain better compaction and stability of the reclaimed gravel. After the rough and wet tailings are backfilled it will be followed by the overburden. This will ensure that the voids surrounding the coarse gravel will be filled up with finer sediments. The heavy vehicles will obtain compaction during backfilling stage. The above sequence will continue until the last pit is reached. The topsoil stored at the beginning of mining will now be utilised for final rehabilitation. The maximum areas that will be disturbed during the mining operation are very difficult to determine because of the varying depth of the excavations.

e) Policy and Legislative Context

<p>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</p>	<p>REFERENCE WHERE APPLIED</p>	<p>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT. (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)</p>
<p>The Constitution of South Africa (Act No. 108 of 1996)</p>		<p>The Constitution is the supreme law of the Republic and all law and conduct must be consistent with the Constitution. The Chapter on the Bill of Rights contains a number of provisions, which are relevant to securing the protection of the environment. Section 24 states that “everyone has the right to (a) an environment that is not harmful to their health or well-being and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that – (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The Constitution therefore, compels government to give effect to the people’s environmental right and places government under a legal duty to act as a responsible custodian of the countries environment. It compels government to pass legislation and use other measures to protect the environment, to prevent pollution and ecological degradation, promote conservation and secure sustainable development.</p>
<p>The National Environmental Management Act (Act No. 107 of 1998)</p>	<p>S24(1) of NEMA S28(1) of NEMA</p>	<p>NEMA provides for co-operative governance by establishing principles and procedures for decision-makers on matters affecting the environment. An important function of the Act is to serve as an enabling Act for the promulgation of legislation to effectively address integrated environmental management. Some of the principles in the Act are accountability; affordability; cradle to grave management; equity; integration; open information; polluter pays; subsidiary; waste avoidance and minimisation; co-operative governance; sustainable development; and environmental protection and justice.</p>

		<p>The mandate for EIA lays with the National Environmental Management Act (107 of 1998) and the EIA Regulations No. 982, 983, 984, and 985 promulgated in terms of Section 24 of NEMA. The EIA Regulations determine that an Environmental Authorisation is required for certain listed activities, which might have a detrimental effect on the environment. This EIA was triggered by activity 21, 24(ii) and 27 listed in Regulation R983, which requires a 'basic assessment process.'</p>
<p>The National Water Act (Act No. 36 of 1998)</p>	<p>S21 (a)(b)</p>	<p>Sustainability and equity are identified as central guiding principles in the protection, use, development, conservation, management and control of water resources. The intention of the Act is to promote the equitable access to water and the sustainable use of water, redress past racial and gender discrimination, and facilitate economic and social development. The Act provides the rights of access to basic water supply and sanitation, and environmentally, it provides for the protection of aquatic and associated ecosystems, the reduction and prevention of pollution and degradation of water resources.</p> <p>As this Act is founded on the principle that National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, a person can only be entitled to use water if the use is permissible under the Act. Chapter 4 of the Act lays the basis for regulating water use.</p> <p>A Section 21 (a) Water Use License in terms of the National Water Act (Act No. 36 of 1998) will be applied for.</p>
<p>Management: Air Quality Act (Act No. 39 of 2004)</p>	<p>S21</p>	<p>The object of this Act is to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air in the Republic; the prevention of air pollution and ecological degradation; and securing ecologically sustainable development while promoting justifiable economic and social development.</p> <p>Regulations No. R248 (of 31 March 2010) promulgated in terms of Section 21(1) (a) of the National Environmental Management Act: Air Quality Act (39 of 2004) determine that an Atmospheric Emission License (AEL) is required for certain listed activities, which result in atmospheric emissions which have or may have a detrimental effect on the environment. The Regulation also sets out the minimum emission standards for the listed</p>

		<p>activities. It is not envisaged that an Atmospheric Emission License will be required for the proposed development.</p>
<p>The National Heritage Resources Act (Act No. 25 of 1999)</p>		<p>The Act aims to introduce an integrated and interactive system for the management of the heritage resources, to promote good government at all levels, and empower civil society to nurture and conserve heritage resources so that they may be bequeathed to future generations and to lay down principles for governing heritage resources management throughout the Republic. It also aims to establish the South African Heritage Resources Agency together with its Council to co-ordinate and promote the management of heritage resources, to set norms and maintain essential national standards and to protect heritage resources, to provide for the protection and management of conservation-worthy places and areas by local authorities, and to provide for matters connected therewith.</p> <p>The Act protects and manages certain categories of heritage resources in South Africa. For the purposes of the Heritage Resources Act, a "heritage resource" includes any place or object of cultural significance. In this regard the Act makes provision for a person undertaking an activity listed in Section 28 of the Act to notify the resources authority. The resources authority may request that a heritage impact assessment be conducted if there is reason to believe that heritage resources will be affected.</p>
<p>Conservation of Agricultural Resources Act (Act No. 85 of 1983)</p>		<p>The objective of the Act is to provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.</p> <p>Consent may be required from the Department of Agriculture in order to confirm that the proposed development is not located on high potential agricultural land.</p>
<p>Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)</p>		<p>The Minerals and Petroleum Resources Development Act identifies the state as the official custodian of South Africa's Mineral and Petroleum Resources. Therefore all activities relating to the reconnaissance, prospecting rights, mining rights, mining permits and retention permits are regulated by the State.</p>

		<p>A mining permit application has been lodge with the Department of Mineral Resources – North West Province</p>
<p>National Infrastructure Plan</p>		<p>The National Government adopted a National Infrastructure Plan in 2012. With the plan they aim to transform the South African economic landscape while simultaneously creating significant numbers of new jobs, and strengthening the delivery of basic services.</p> <p>Government will over the three years from 2013/14 invest R827 billion in building and upgrading existing infrastructure.</p> <p>These investments will improve access by South Africans to healthcare facilities, schools, water, sanitation, housing and electrification. On the other hand, investments in the construction of ports, roads, railway systems, electricity plants, hospitals, schools and dams will contribute to faster economic growth.</p> <p>This mining activity will indirectly contribute to the growing of the South African economy by supplying SANRAL with material to build and upgrade road infrastructure.</p>
<p>Northern Cape Province Growth and Development Strategy</p>		<p>The Northern Cape’s development vision is: “Building a prosperous, sustainable, growing provincial economy to reduce poverty and improve social development.” The two primary development objectives have been identified as:</p> <ul style="list-style-type: none"> • Promoting the growth, diversification and transformation of the provincial economy. • Poverty reduction through social development. <p>The achievement of these primary development objectives depends on the achievement of a number of related objectives that describe necessary conditions for growth and development. These are:</p> <ul style="list-style-type: none"> • Developing requisite levels of human and social capital. • Improving the efficiency and effectiveness of governance and other development institutions. • Enhancing infrastructure for economic growth and social development.

		<p>The PSDS will guide strategic decisions related to the location and the distribution of resources in time and geographic space. The following strategic elements of the PSDS pertain to the municipality:</p> <p>Established growth centres - Development priorities should be the reinforcement of growth in established economic sectors through diversification, SMME development and increased levels of service provision.</p> <p>Land reform areas - The development priorities should be maximisation of LED opportunities, promoting integration and linkages with the surrounding economy and the provision of appropriate levels of service.</p> <p>The NCPGDS also addresses the issue of financing growth and development - Securing adequate financial resources to finance growth and development is a critically important strategic imperative to achieve the economic and social development of the Northern Cape.</p> <p>Implementing, monitoring and evaluating the NCPGDS - Despite the limitations of conditions set by national government, provincial government remains a significant catalyst for economic growth and social development. The NCPGDS is, thus, an important tool to ensure that the development impact of what government and its partners do is maximised.</p>
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f) Need and desirability of the proposed activities.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

Need for the proposed activity

South Africa has the most diverse range of diamond deposits in the world. Deposits include open pit and underground kimberlite pipe/dyke/fissure mining, alluvial mining, as well as on and offshore marine mining. South Africa produced 6,139,682.00 carats in 2009. South Africa produces in the region of 5% of global production and is ranked 7th in the world in terms of rough diamond production.

A severe downturn was experienced in the second half of 2008, but both production and prices are showing signs of stabilisation. This recovery has encouraged junior diamond miners to resume production and to continue with proposed expansion projects

The establishment of the mining activity will significantly contribute to achieving this objective and will also address some of the objectives identified by the Magareng Local Municipality Integrated Development Plan (IDP, 2016).

Desirability of the proposed activity

The facility's contribution towards development and the associated benefits to society in general is discussed below:

- **Economic growth** - South Africa's total reserves remain some of the world's most valuable, with an estimated worth of R20.3-trillion. Overall, the country is estimated to have the world's fifth-largest mining sector in terms of GDP value.

It has the world's largest reserves of manganese and platinum group metals (PGMs), according to the US Geological Survey, and among the largest reserves of gold, diamonds, chromite ore and vanadium.

With South Africa's economy built on gold and diamond mining, the sector is an important foreign exchange earner, with gold accounting for more than one-third of exports. In 2009, the country's diamond industry was the fourth largest in the world.

Mining is a cornerstone of the economy, making a significant contribution to economic activity, job creation and foreign exchange earnings. Mining and its related industries are critical to South Africa's socio-economic development.

- **Social benefits** - Alluvial diamond mines have been significant employers of local communities and provide necessary services to these communities

g) Motivation for the overall preferred site, activities and technology alternative.

Location of the site

The location of the site is preferred due to the presence of shallow diamond. The site is located approximately 12.6 km south of the town of Windsorton.

Preferred activity

The mining of alluvial diamonds and Diamonds general is the optimum preferred activity for the site. The shallow diamond deposits makes the site ideal for alluvial diamond and diamonds general mining. The mine will provide significantly more job opportunities than what is providing currently.

Technology alternatives

In terms of the technologies proposed, these have been chosen based on the long term success of their mining & prospecting history. The mining activities is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated.

The preferred technology for the proposed mining activity, will be to remove the diamond bearing gravel with an excavator, depositing it in the 10 – 18 feet rotary pan(s) to be washed and sorted.

Pros & Cons of the alternative Dense Media Separation (DMS)

Advantages	Disadvantages
DMS plants is used mostly for kimberlite deposits	10 times more expensive than Rotary pan
	Water consumption is high
	Operating costs are expensive

In a Dense Media Separation (DMS) plant, powdered ferrosilicon (an alloy of iron and silicone) is suspended in water to form a fluid near the density of diamond (3.52 g/cm³), to which the diamond bearing material is added to begin the separation process of the heavier minerals from the lighter material. Additional separation of the denser material occurs by centrifuge in “cyclones” that swirl the mixture at low and high speeds, forcing the diamonds and other dense minerals to the walls and then out the bottom of the cyclone. Waste water rises at the center of the cyclones and is sucked out and screened to remove waste particles. The DMS process results in a concentrate that generally weighs less than one percent of the original material fed into the plant at the beginning of the process.

Pros & Cons of the alternative Rotary Pan Plants

Advantages	Disadvantages
More cost effective	The industry perception that Rotary Pan Plants yield poorer diamond recoveries
Readily available	
Generate more work opportunities	

Consume less water	
Rotary Pan Plants are most often used when mining alluvial deposits	

In a Rotary Pan plant, crushed ore, when mining kimberlite, or alluvial gravel and soil is mixed with water to create a liquid slurry called “puddle” which has a density in the 1.3 to 1.5 g/cm³ range. The mix is stirred in the pan by angled rotating “teeth”. The heavier minerals, or “concentrate”, settle to the bottom and are pushed toward an extraction point, while lighter waste remains suspended and overflows out of the centre of the pan as a separate stream of material. The concentrate, representing just a small percentage of the original kimberlite ore or alluvial gravels, is drawn off for final recovery of the diamonds.

Both methods are in actual fact used for bulk material reduction and require a further process for the final diamond recovery however, for this project the Rotary Pan will be used.

h) Full description of the process followed to reach the proposed preferred alternatives within the site.

NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

i) Details of the development footprint alternatives considered.

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

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

Consideration of alternatives

The DEAT 2006 guidelines on ‘assessment of alternatives and impacts’ proposes the consideration of four types of alternatives namely, the no-go, site, activity, and technology alternatives. It is however, important to note that the regulation and guidelines specifically state that only ‘feasible’ and ‘reasonable’ alternatives should be explored. It also recognizes that the consideration of alternatives is an iterative process of feedback between the developer, the EAP and Interested and affected parties, which in some instances culminates in a single preferred project proposal. The following sections explore each type of alternative in relation to the proposed activity.

• **Location alternatives**

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. No other properties have at this stage been secured by Rietput Delwery CC in the Windsorton area to potentially mine alluvial diamonds and diamonds general. If we cannot mine on the farm, the status quo remain the same, therefore there will be no alternative site.

developer. The layout follows the limitations of the site and aspects such as, roads, site offices and workshop area as well as fencing– refer **Appendix 4**.

- **Operational alternatives**

One hectare of surface area will be disturbed at any one time of the project, the lifetime of the project is approximately 3 years. It is foreseen that approximately 60 tons of diamond bearing gravel will be removed, from every hectare of the proposed mining activity, which is 5 hectares in extent. The facility will be operational from 7 A.M. to 5 P.M., Monday to Friday, but may working hours may extend to 6 P.M. and Saturdays. It is however possible that the lifetime of the project can be prolonged by a year or two and that the facility can become operational for prolonged hours or over weekends, depending on the diamond yield of the gravel.

- **No-go alternative**

This alternative considers the option of ‘do nothing’ and maintaining the status quo. The description provided in section H of this report could be considered the baseline conditions (status quo) to persist should the no-go alternative be preferred. The site is currently zoned for agricultural land uses. Should the proposed activity not proceed, the site will remain unchanged and will continue to be used for low density cattle grazing.

- ii) **Details of the Public Participation Process Followed**

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

1. **Advertisement and Notices**

Newspaper advertisement

Since the proposed development is unlikely to result in any impacts that extent beyond the municipal area where it is located, it was deemed sufficient to advertise in a local newspaper. An advertisement will be placed in English in the local newspaper (Noordkaap) on the 11 May 2016 (**see Appendix 6**) notifying the public of the EIA process and requesting Interested and Affected Parties (I&APs) to register with, and submit their comments to Milnex 189 CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement.

Site notices

Site notices were placed on site in English on the 18 May 2016 to inform surrounding communities and immediate adjacent landowners of the proposed development. I&APs will be given the opportunity to raise comments within 30 days. Photographic evidence of the site notices will be included in **Appendix 6**.

Direct notification and circulation of BAR to identified I&APs

Identified I&APs, including key stakeholders representing various sectors, are directly informed of the proposed development and the availability of the BAR via registered post on 12 May 2016 and are requested to submit comments by 13 June 2016. A copy of this report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Friday,

from 12 May 2016. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**. The consultees included:

- Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)
- The Department of Water and Sanitation
- The Department of Mineral Resources
- NC Department of Agriculture, forestry and fisheries (DAFF)
- The Provincial Heritage Resources Agency (PHRA), Northern Cape
- The Wildlife and Environment Society of South Africa (WESSA)
- Department of Roads and Public Works (DRPW)
- The Frances Baard District Municipality
- The Municipal Manager at the Magareng Local Municipality
- The Local Councilor at the Magareng Local Municipality
- NC Department of Rural Development & Land Reform: Land Restitution Support

It is expected from I&APs to provide their inputs and comments within 30 days after receipt of the notification or BAR.

Direct notification of surrounding land owners and occupiers

Written notices and the availability of the BAR are also provided to all surrounding land owners and occupiers via registered post on 12 May 2016 and are requested to submit comments by 13 June 2016. For a list of surrounding land owners see **Appendix 6**.

- South African Heritage Resources Agency (SAHRA)
- Delta Blue Trading 41 CC
- Johannes Ignatius Nicolaas Jooste
- Tradequick 1090
- Oskamp Trust
- Haywes Trust: Not available on Search Works

2. Consultation

All I&AP's are invited to attend the public meeting. The Public Meeting is scheduled for the 02 June 2016 at 11:00am–12:00pm on Portion 7 (Oskamp) of the farm Slypklip South Estate 36. Please indicate on the comments and response form if you wish to attend the Public Meeting. The coordinates and directions (figure1) of the public meeting follows below.

Coordinates

28°26'34.27"S

24°44'3.11"E

- Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)
- The Department of Water and Sanitation
- The Department of Mineral Resources

- NC Department of Agriculture, forestry and fisheries (DAFF)
- The Provincial Heritage Resources Agency (PHRA), Northern Cape
- The Wildlife and Environment Society of South Africa (WESSA)
- Department of Roads and Public Works (DRPW)
- The Frances Baard District Municipality
- The Municipal Manager at the Magareng Local Municipality
- The Local Councilor at the Magareng Local Municipality
- NC Department of Rural Development & Land Reform: Land Restitution Support
- South African Heritage Resources Agency (SAHRA)
- Delta Blue Trading 41 CC
- Johannes Ignatius Nicolaas Jooste
- Tradequick 1090
- Oskamp Trust
- Haywes Trust: Not available on Search Works

The following people attended the public meeting which was held on the 02 June 2016 at 11:00am–12:00pm on Portion 7 (Oskamp) of the farm Slypklip South Estate 36.

Milnex Representative: Ms. Percy Sehaole
Ms. Lizanne Esterhuizen

I&AP: Mr Clinton Misdorp (Renting a portion on Portion 7 (Oskamp) of the farm Slypklip South Estate 36)
Mr Johan Jooste (Surrounding land owner)

Comments raised are attached in appendix 6 (Public meeting)

3. Issues Raised by Interested and Affected Parties

All comments received during the review period of the draft BAR, as well as response provided will be captured and recorded within the comment and response report and attached in the final Report.

i. **Summary of issues raised by I&APs**
 (Complete the table summarising comments and issues raised, and reaction to those responses)

Interested and Affected Parties		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issue and or response where incorporated
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.					
Organisation	Contact person				
Land Owner					
Slypklip South Estate 7/36	Oskamp Trust		No comments received		
Landowners or lawful occupiers on adjacent properties					
Slypklip South Estate 12/36	Delta Blue Trading 41 CC Mr. Clinton Misdorp	02/06/2016	<p>Email received on 02/06/2016 states the following:</p> <p>I wish to highlight the follow comments and concerns that I have regarding the above mention application.</p> <p>1. Local wildlife What impact will the mining and prospecting have on the follow local wildlife that we currently have on the neighbouring farms and river? We have an Aardwolf pair in our area, Secretary birds, Fish eagles and a number of fresh water otters in our immediate area.</p> <p>2. Position of pans and general environment management program I am aware of the noise, dust and vehicle traffic that is associated with mining. What measures and consideration will be in place as to minimize those disturbances and my family home in located right on the boundary of the proposed prospecting area. What will be their operating hours? Will they work 24 hours? Will after hours work take us into consideration as my children and I are sensitive to noise in the evenings.</p>	Email sent 07/06/2016 that Milnex 189 CC acknowledge the receipt of your comments.	

			<p>3. Irrigation land We currently have irrigation land across the road on Oskamp (An existing agreement between Mr. le Roux and our company.) Will that land be threaten as a result of their mining or prospecting?</p> <p>4. Livestock What security measures will be in place in order to ensure safety of our sheep and cattle? Our livestock currently graze near the vicinity. Will they fence off the area that they are mining and prospecting?</p> <p>5. Security I have security concerns that are associated with mining in our area. There have already been shootings and death on mining sites in our vicinity. Will sorting happen on sight or off sight? Will there be signage etc. that will help distinguish their site so as to indicate that it is not part of our farm. Our fear is that it is quite easily to assume that the current proposed site is part of our farming operation and thus making our home and family vulnerable and visible to any would be criminal element. This is a very real threat and concern for me and my family.</p>		
Slypklip South 7/33	Johannes Ignatius Nicolaas Jooste		No comments received		
Slang Heuvel 1/160 Search Works Re/1/160	Tradequick 1090		No comments received		
Slypklip South 1/33	Haywes Trust Not available on Search Works				
The Municipality in which jurisdiction the development is located					
Magareng Local Municipality	Municipal Manager: Lesley Mokwena		No comments received		
Municipal councilor of the ward in which the site is located					
Magareng Local Municipality	Ward 5 Councillor		No comments received		
Organs of state having jurisdiction					

Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)	Mrs. Doreen Werth		No comments received		
The Department of Water Affairs and Forestry (DWAF)	Mrs. Nosie Mazwi and Mr. Abe Abrahams		No comments received		
NC Department of Agriculture, forestry and fisheries (DAFF)	Mr. Mothibi Viljoen		No comments received		
Provincial Heritage Resources Agency (PHRA)- Northern Cape	K. Sofoleng		No comments received		
Department of Roads and Public Works (DRPW)	HOD: Ms. Ruth Palm		No comments received		
Department of Mineral Resources – Northern Cape	B. Jackals		Letter dated 04/05/2016 acknowledges receipt of the application.	A WULA will not be needed for this application as the portion (5ha) is not near any water course	
			Letter dated 10/05/2016 states that the application has been accepted and Milnex 189 CC should comply with the following: <ul style="list-style-type: none"> a) Notify and consult with the landowner, lawful occupier and any I&AP and include the results of the consultation in the environmental reports. b) Upload on the SAMRAD system and submit the relevant environmental report. c) Lodge an application in terms of National Water Act with the Department of Water Affairs with immediate effect. 		
NC Department of Rural Development & Land Reform: Land Restitution Support	Mangalane du Toit		Letter signed the 05/05/2016 state the following: The commune serves to advise Milnex 198 CC that according to the Northern Cape database there are no restitution claims lodged against Portion 7 of the farm Slypklip South Estate 36, Registration Division: Kimberley RD, Northern Cape province.	Email sent 26/04/2016, proof of land claims consultation	
Other–					
Frances Baard District Municipality	Municipal Manager: Ms Z M Bogatsu		No comments received		
WESSA	Mr. John Wesson		No comments received		

South African Heritage Resources Agency (SAHRA)	Chief Executive Officer: Ms. Veliswa V Baduza		No comments received		
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ii. **The Environmental attributes associated with the alternatives. (The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)**

(1) Baseline Environment

The baseline environment is described with specific reference to geotechnical conditions, ecological habitat and landscape features, Soil, land capability and agricultural potential, climate and the visual landscape. However, due to the fact that the area proposed for mining exclusively consists of land used for grazing and cultivation.

(a) Type of environment affected by the proposed activity.

(its current geographical, physical, biological, socio- economic, and cultural character).

Geology and Soils

The area is underlain by the following geological types. Outcrops of the andesitic lavas of the Ventersdorp Supergroup, which is mostly overlain by calcrete, occur in isolated patches as rocky hills. Outcrops of tillite of the Dwyka Formation and shale of the Prince Albert Formation (Karoo Sequence) occur in the north-north-western part of the study area. The largest part of the study area is underlain by Aeolian sand and sometimes alluvial gravels of tertiary to recent age covering Dwyka tillite. Surface limestones occur sporadically in the area. During the 1920s relatively rich diamond deposits were found in the ancient gravel filled water course of the Vaal River within area. The heaps of mixed gravel still present in the area attest to the disturbance to which it was subjected. The lavas are green to grey-green in colour. The non-amygdaloidal varieties occur within the study area. The amygdaloidal, which comprise quartz, agate, chalcedony and carnelian are a major source of the Vaal River agates.

Stratigraphically the lavas belong to the Allenridge formation and represents the uppermost volcanic stage of the Ventersdorp Supergroup. Quartzites of the Bothaville formation which underlies the Allenridge formation, rarely outcrop within the study area and are usually exposed where alluvial diggings have removed the surficial deposits. The older gravels within the study area occur in channels or so-called "sluits". One prominent "sluit" is found within the study area, however there exists no evidence in the literature to suggest that the channels are sites of eroded kimberlite dykes.

Ecological habitat and landscape features

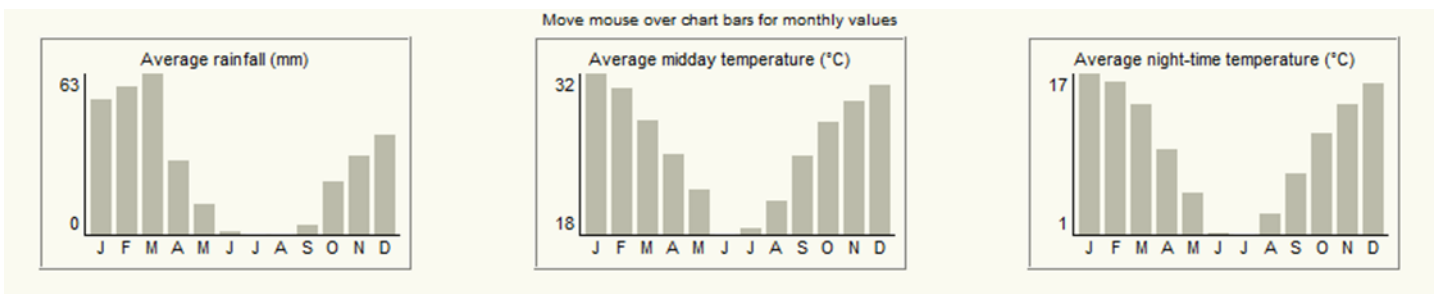
In terms of vegetation type the proposed area falls within vegetation unit Aza 5 & SVk 4, which is known as the Highveld Alluvial Vegetation & Kimberley Thornveld (Mucina and Rutherford, 2006). **See figure 4 below and appendix 7.**

According to Mucina and Rutherford (2006:640), the Highveld Alluvial Vegetation covers the Free State, North-West, Mpumalanga and Gauteng Provinces as well as Lesotho and Swaziland: with Alluvial drainage lines and floodplains along rivers embedded within the Grassland Biome and marginal (eastern) units of the Kalahari (Savanna Biome), such as along the upper Riet, Harts, upper Modder, upper Caledon, Vet, Sand, Vals, Wilge, Mooi, middle and upper Vaal Rivers etc. and their numerous tributaries. Altitude ranging from 1 000 – 1 500 m. The area has a relative flat topography supporting riparian thickets mostly dominated by Acacia karroo, accompanied by seasonally flooded grasslands and disturbed herblands often dominated by alien plants.

The Kimberley Thornveld vegetation type is described by Mucina and Rutherford (2006) as 'Least threatened'. The Kimberley Thornveld vegetation covers the North West, Free State and Northern Cape Provinces: Most of the Kimberley, Hartswater, Bloemhof and Hoopstad Districts as well as substantial parts of the Warrenton, Christiana, Taung, Boshof and to some extent the Barkley West District. The area often has slightly irregular

Climate and water availability

Windsorton normally receives about 311mm of rain per year, with most rainfall occurring mainly during summer. The chart below (lower left) shows the average rainfall values for Windsorton per month. It receives the lowest rainfall (0mm) in July and the highest (63mm) in March. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Windsorton range from 18°C in June to 32°C in January. The region is the coldest during July when the mercury drops to 0.8°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures (SAexplorer, 2016).



- Agricultural / land capability

- Land capability is the combination of soil suitability and climate factors. The site and surrounds has a land capability classification, on the 8 category scale, of Class 5 – non-arable:
- Land in Class V has little or no erosion hazard but have other limitations impractical to remove that limit its use largely to pasture, range, woodland or wildlife food and cover. These limitations restrict the kind of plants that can be grown and prevent normal tillage of cultivated crops. Pastures can be improved and benefits from proper management can be expected.
- It is nearly level. Some occurrences are wet or frequently flooded. Other are stony, have climatic limitations, or have some combination of these limitations.
- Examples of Class V are:
- Bottomlands subject to frequent flooding that prevents the normal production of cultivated crops.
- Nearly level land with a growing season that prevents the normal production of cultivated crops.
- Level or nearly level stony or rocky land.
- Poned areas where drainage for cultivated crops is not feasible but which are suitable for grasses or trees (refer to Land capability map attached as **Appendix 5**).

Description of the socio-economic environment

- Socio-economic conditions

Magareng Local Municipality is an administrative area in the Frances Baard District of the Northern Cape in South Africa. Magareng is a Setswana name meaning "in the middle". The name reflects the geographic location of the municipality in relation to other areas.

According to the 2001 census the total population of Magareng was estimated 24,204 people. A huge influx of people into Magareng has since then taken place.

The urban node consists of Warrenton, Warrenvale and Ikhutseng while small agricultural villages have been established throughout the municipal area of which Bullhill, Fourteen Streams, Sydney's Hope, Windsorton Station, Moleko's Farm, Nazareth and Hartsvallei Farms are the most prominent. The rest of the area comprises mainly mixed farming. The area of jurisdiction is approximately 1542 km² in extent and accommodates approximately 24,042 people (StatsSA – 2011). 72% of the total population is Black, 17, 5% Coloured while the White population represents only 10% of the total population. The Indian and Asian population is insignificantly small to impact on the proportional representation.

The Northern Cape Province is renowned for its diamond mining. The GDP contribution by the mining and quarrying sector of the economy was 21,4% in 2001 while the finance, real estate and business services sector contributed 19,8% of the GDP of the province in 2001. However, the contribution made by the mining and quarrying sector to the GDP of South Africa in 2001 was only 5,7%. (Stats SA, 2002). The Northern Cape Province has showed an increase in its contribution to the GDP of South Africa of 2,7% for 2001, which is almost equal to the national average of 2,8%. If one however analyse the local economy of Magareng, the contribution made by the mining and quarrying sector will be far less than that recorded for the rest of the province as most of the mining and quarrying activities falls outside the municipal area. Although there is no research that can support these conclusions drawn, participants in the IDP review workshops felt that agricultural sector was the predominant income base of the municipal area. This assumption is supported by the employment industry statistics which indicates that the agricultural sector is the largest employer in the municipal area, followed by the Social Services sector. One can therefore assume that the local economy is profoundly based on agriculture.

The socio-economic conditions are largely shaped by the high percentage of unemployment that prevails in the municipality. The economic landscape is dominated by the large number of diamond diggers with a few large companies and the rest mainly consisting of smaller companies and informal operators. There are no large companies in operation in the borders of the municipality with limited employment opportunities. The poor economic climate is contributing to poor social conditions throughout the municipality. The percentage of unemployment increased after the decline in the mining industry and agriculture sector and is estimated at 45%. It is also estimated that approximately 40% of the population earns income below the poverty line.

- Cultural and heritage aspects

Special attention will be given to the identification of possible cultural or heritage resources on site.

(b) Description of the current land uses.

The desktop survey revealed that land uses on and in the immediate vicinity of the proposed development are essentially comprised of grazing (cattle), mining and cultivation activities.

(c) Description of specific environmental features and infrastructure on the site.

Due to the fact that the area proposed for the mining activity exclusively consists of land used for grazing, no environmental features were identified on site. The farm consist of low potential grazing land, canals and runs adjacent to the Vaal River. However, the proposed 5 ha mining activities is not situated close to the river.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

Refer to Locality Map attached as **Appendix 3**.

iii. Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

Significance of potential impacts

The following sections present the outcome of the significance rating exercise. The results suggest that almost none of the key issues identified as part of the basic assessment process had a negative high environmental significance. Instead the overall score indicate a low environmental significance score.

CONSTRUCTION PHASE

Direct impacts: During the construction phase minor negative impacts are foreseen over the short term. The latter refers to a period of months. The installation of services may result in the loss or fragmentation of indigenous natural fauna and flora, loss or fragmentation of habitats, soil erosion, hydrology, and temporary noise disturbance, generation of waste, visual intrusions, increase in construction vehicle traffic, risk to safety, livestock and farm infrastructure, and increased risk of veld fires. It is obvious that the construction phase will also have a direct positive impact through the provision of employment opportunities for its duration and technical advice for local farmers and municipalities. The abovementioned impacts are discussed in more detail below:

- **Loss or fragmentation of indigenous natural fauna and flora –**

According to Mucina and Rutherford (2006:640), the Highveld Alluvial Vegetation covers the Free State, North-West, Mpumalanga and Gauteng Provinces as well as Lesotho and Swaziland: with Alluvial drainage lines and floodplains along rivers embedded within the Grassland Biome and marginal (eastern) units of the Kalahari (Savanna Biome), such as along the upper Riet, Harts, upper Modder, upper Caledon, Vet, Sand, Vals, Wilge, Mooi, middle and upper Vaal Rivers etc. and their numerous tributaries. Altitude ranging from 1 000 – 1 500 m. The area has a relative flat topography supporting riparian thickets mostly dominated by *Acacia karroo*, accompanied by seasonally flooded grasslands and disturbed herblands often dominated by alien plants.

The Kimberley Thornveld vegetation type is described by Mucina and Rutherford (2006) as ‘Least threatened’. The Kimberley Thornveld vegetation covers the North West, Free State and Northern Cape Provinces: Most of the Kimberley, Hartswater, Bloemhof and Hoopstad Districts as well as substantial parts of the Warrenton, Christiana, Taung, Boshof and to some extent the Barkley West District. The area often has slightly irregular plains with a well-developed tree layer with *Acacia Erioloba*, *A. tortillis*, *A. karroo* and *Boscia albitrunca* and a well-developed shrub layer with occasional dense stands of *Tarchonanthus camphoratus* and *A. mellifera*. Grass layer open with much uncovered soil.

Loss or fragmentation of indigenous natural fauna and flora	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Definite (4)	Definite (4)

Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Significant loss of resource (3)	Marginal loss of resource (2)
Cumulative impact	Negligible cumulative impacts (1), since the pitting and trenching will be only 5ha in extent.	
Significance	Negative low (26)	Negative low (12)
Can impacts be mitigated?	<p>If the development is approved, contractors must ensure that no mammalian species are disturbed, trapped, hunted or killed during the construction phase. If the development is approved, every effort should be made to confine the footprint to the blocks allocated for the development and have the least possible edge effects on the surrounding area. The EMPr also provides numerous mitigation measures – refer to section (f) of the EMPr.</p> <p>The potential impacts associated with damage to and loss of farmland should be effectively mitigated. The aspects that should be covered include:</p> <ul style="list-style-type: none"> • The site should be fenced off prior to commencement of construction activities; • The footprint associated with the construction related activities (access roads, construction platforms, workshop etc.) should be confined to the fenced off area and minimised where possible; • An Environmental Control Officer (ECO) should be appointed to monitor the establishment phase of the construction phase; • All areas disturbed by construction related activities, such as access roads on the site, construction platforms, workshop area etc., should be rehabilitated at the end of the construction phase; • The implementation of a rehabilitation programme should be included in the terms of reference for the contractor/s appointed. Specifications for the rehabilitation are provided throughout the EMPr – section (f) of the EMPr. • The implementation of the Rehabilitation Programme should be monitored by the ECO. 	

- Loss or fragmentation of habitats – Given the low probability of resident threatened species occurring at the footprint site, the low probability of any significant conservation corridor or buffer zone at the footprint site. Vaal river is found outside the proposed area. The mining activities will have no impact on them, since a great distance are between these waterbodies and the proposed mining area.

Loss or fragmentation of habitats	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Definite (4)	Definite (4)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)

Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Negligible cumulative impacts (1), since the pitting and trenching will be only 5ha in extent.	
Significance	Negative low (12)	Negative low (12)
Can impacts be mitigated?	Exotic and invasive plant species should not be allowed to establish, if the development is approved. Where exotic and invasive plant species are found at the site continuous eradication should take place. If the development is approved, every effort should be made to confine the footprint to the blocks allocated for development – section (f) of the EMPr also provides numerous mitigation measures related to fauna and flora.	

- Loss of topsoil – Topsoil may be lost due to poor topsoil management (burial, erosion, etc.) during construction related soil profile disturbance (levelling, excavations, disposal of spoils from excavations etc.) The effect will be the loss of soil fertility on disturbed areas after rehabilitation.

Loss of topsoil	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Geographical extent	Site (1)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal (2)	Marginal (2)
Cumulative impact	Negligible cumulative impact (1).	
Significance	Negative low (20)	Negative low (18)
Can impacts be mitigated?	<p>The following mitigation or management measures are provided:</p> <ul style="list-style-type: none"> • If an activity will mechanically disturb below surface in any way, then any available topsoil should first be stripped from the entire surface and stockpiled for re-spreading during rehabilitation. • Topsoil stockpiles must be conserved against losses through erosion by establishing vegetation cover on them. • Dispose of all subsurface spoils from excavations where they will not impact on undisturbed land. • During rehabilitation, the stockpiled topsoil must be evenly spread over the entire disturbed surface. • Erosion must be controlled where necessary on top soiled areas. <p>Establish an effective record keeping system for each area where soil is disturbed for constructional purposes. These records should be included in environmental performance reports, and should include all the records below.</p> <ul style="list-style-type: none"> • Record the GPS coordinates of each area. • Record the date of topsoil stripping. • Record the GPS coordinates of where the topsoil is stockpiled. 	

	<ul style="list-style-type: none"> Record the date of cessation of constructional (or operational) activities at the particular site. Photograph the area on cessation of constructional activities. Record date and depth of re-spreading of topsoil. Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time. <p>Section (f) of the EMP also provide mitigation measures related to topsoil management.</p>
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- Soil erosion** – Soil erosion due to alteration of the land surface run-off characteristics. Alteration of run-off characteristics may be caused by construction related land surface disturbance, vegetation removal and the establishment of roads. Erosion will cause loss and deterioration of soil resources. The erosion risk is low due to the low slope gradients and low to moderate erodibility of the soils.

Soil erosion	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Geographical extent	Site (1)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal (2)	Marginal (2)
Cumulative impact	Negligible cumulative impact (1).	
Significance	Negative low (20)	Negative low (18)
Can impacts be mitigated?	<p>The following mitigation or management measures are provided: Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.</p> <p>Include periodical site inspection in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records the occurrence any erosion on site or downstream – refer to section (f) of the EMP.</p>	

- Temporary noise disturbance** - Construction activities will result in the generation of noise over a period of months. Sources of noise are likely to include vehicles, the use of machinery such as back actors and people working on the site. The noise impact is unlikely to be significant; but construction activities should be limited to normal working days and hours (7:00 – 17:00).

Temporary noise disturbance	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Definite (4)	Probable (3)
Duration	Short term (1)	Short term (1)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)

Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	The impact would result in negligible to no cumulative effects (1).	
Significance	Negative low (20)	Negative low (9)
Can impacts be mitigated?	Yes, management actions related to noise pollution are included in section (f) of the EMP.	

- Generation of waste - general waste, construction waste, sewage and grey water - The workers on site are likely to generate general waste such as food wastes, packaging, bottles, etc. Construction waste is likely to consist of packaging, scrap metals, waste cement, etc. The applicant will need to ensure that general and construction waste is appropriately disposed of i.e. taken to the nearest licensed landfill. Sufficient ablution facilities will have to be provided, in the form of portable/VIP toilets. No pit latrines, French drain systems or soak away systems shall be allowed.

Generation of waste	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local/district (2)	Local/district (2)
Probability	Definite (4)	Definite (4)
Duration	Short term (1)	Short term (1)
Magnitude	Low (1)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Medium cumulative impact (3) - An additional demand for landfill space could result in significant cumulative impacts if services become unstable or unavailable, which in turn would negatively impact on the local community.	
Significance	Negative medium (13)	Negative low (13)
Can impacts be mitigated?	Yes, it is therefore important that all management actions and mitigation measures included in section (f) of the EMP are implemented.	

- Impacts on heritage objects –The mining will not impact on any heritage estate referred to in section 3(2) of the National Heritage Resources Act. In terms of the National Heritage Resource Act no 25 of 1999. Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA will be contacted immediately and work will stop.

Impacts on heritage objects	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (2)
Duration	Short term (1)	Short term (1)
Magnitude	Medium (2)	Low (1)
Reversibility	Irreversible (4)	Irreversible (4)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Low cumulative impact (2). Should these impacts occur, there may be a cumulative impact on the preservation of heritage objects in the area.	

Significance	Negative low (24)	Negative low (12)
Can impacts be mitigated?	If archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. Also refer to section (f) of the EMP.	

Indirect impacts: The nuisance aspects generally associated with the installation of infrastructure will also be applicable to this development, which relates primarily to the increase in construction vehicle traffic, impact of construction workers on local communities, the influx of job seekers to the area, risk to safety, livestock and farm infrastructure, and increased risk of veld fires.

- Increase in construction vehicle traffic – The movement of heavy construction vehicles during the construction phase has the potential to damage local farm roads and create dust and safety impacts for other road users in the area. Access to the site will be obtained from various gravel off the R357. While the volume of traffic along this road is low, the movement of heavy vehicles along this road is likely to damage the road surface and impact on other road users. The contractor should be required to ensure that damage to the road is repaired before the handover of the project. The movement of additional heavy vehicle traffic associated with the construction phase of the project is unlikely to add significantly to the current traffic load on the road. The impact on the gravel roads is therefore likely to be low.

Increase in construction vehicle traffic	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Probable (3)
Duration	Short term (1)	Short term (1)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Medium cumulative impact (3). If damage to roads is not repaired then this will affect the farming activities in the area and result in higher maintenance costs for vehicles of local farmers and other road users. The costs will be borne by road users who were no responsible for the damage.	
Significance	Negative low (22)	Negative low (11)
Can impacts be mitigated?	<p>The potential impacts associated with heavy vehicles can be effectively mitigated. The mitigation measures include:</p> <ul style="list-style-type: none"> • The contractor must ensure that damage caused by construction related traffic to the gravel roads is repaired before the completion of the construction phase. The costs associated with the repair must be borne by the contractor; • Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers; • All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits. 	

	Also refer section (f) of the EMP. For mitigation measures related to construction traffic.
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- Impact of construction workers on local communities - The presence of construction workers poses a potential risk to family structures and social networks. While the presence of construction workers does not in itself constitute a social impact, the manner in which construction workers conduct themselves can impact on local communities. The most significant negative impact is associated with the disruption of existing family structures and social networks.

Impacts of construction workers on local communities	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (1)	Local (1)
Probability	Probable (3)	Probable (3)
Duration	Short term for community as a whole (1)	Short term for community as a whole (1)
Magnitude	Low for the community as a whole (1)	Low for the community as a whole (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Medium cumulative effects (3)	
Significance	Low for the community as a whole (11)	Low for the community as a whole (11)
Can impacts be mitigated?	<p>Yes, the potential risks associated with construction workers can be effectively mitigated. The detailed mitigation measures are outlined in the Environmental Management Programme (EMP) for the Construction Phase. Aspects that should be covered include:</p> <ul style="list-style-type: none"> • Where possible Rietput Delwery CC should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically for semi and low-skilled job categories; • Rietput Delwery CC and the contractor(s) should develop a code of conduct for the construction phase. The code should identify which types of behaviour and activities are not acceptable. Construction workers in breach of the code should be dismissed. All dismissals must comply with the South African labour legislation; • Mr. Rietput Delwery CC and the contractor should implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase; • The construction area should be fenced off before construction commences and no workers should be permitted to leave the fenced off area; • The contractor should provide transport to and from the site on a daily basis for low and semi-skilled construction workers. This will enable the contractor to effectively manage and monitor the movement of construction workers on and off the site; • Where necessary, the contractors should make the necessary arrangements to enable low and semi-skilled workers from outside the area to return home over 	

	<p>weekends and/ or on a regular basis. This would reduce the risk posed to local family structures and social networks;</p> <ul style="list-style-type: none"> It is recommended that no construction workers, with the exception of security personnel, should be permitted to stay over-night on the site.
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- Risk to safety, livestock and farm infrastructure** - The presence on and movement of construction workers on and off the site poses a potential safety threat to local farmer's and farm workers in the vicinity of the site threat. In addition, farm infrastructure, such as fences and gates, may be damaged and stock losses may also result from gates being left open and/or fences being damaged or stock theft linked either directly or indirectly to the presence of farm workers on the site.

Risk to safety, livestock and farm infrastructure	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Probable (3)
Duration	Short term (1)	Short term (1)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Negligible cumulative effects (1), provided losses are compensated for.	
Significance	Negative low (22)	Negative low (11)
Can impacts be mitigated?	<p>Key mitigation measures include:</p> <ul style="list-style-type: none"> Rietput Delwery CC should enter into an agreement with the local farmers in the area whereby damages to farm property etc. during the construction phase will be compensated for. The agreement should be signed before the construction phase commences; The construction area should be fenced off prior to the commencement of the construction phase. The movement of construction workers on the site should be confined to the fenced off area; Contractors appointed by Rietput Delwery CC should provide daily transport for low and semi-skilled workers to and from the site. This would reduce the potential risk of trespassing on the remainder of the farm and adjacent properties; Rietput Delwery CC should hold contractors liable for compensating farmers in full for any stock losses and/or damage to farm infrastructure that can be linked to construction workers. This should be contained in the Code of Conduct to be signed between the proponent, the contractors and neighbouring landowners. The agreement should also cover losses and costs associated with fires caused by construction workers or construction related activities (see below); The Environmental Management Programme (EMPr) should outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested; 	

	<ul style="list-style-type: none"> Contractors appointed by Rietput Delwery CC must ensure that all workers are informed at the outset of the construction phase of the conditions contained on the Code of Conduct, specifically consequences of stock theft and trespassing on adjacent farms. Contractors appointed by Rietput Delwery CC must ensure that construction workers who are found guilty of trespassing, stealing livestock and/or damaging farm infrastructure are dismissed and charged. This should be contained in the Code of Conduct. All dismissals must be in accordance with South African labour legislation; The housing of construction workers on the site should be strictly limited to security personnel.
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- Increased risk of veld fires** - The presence of construction workers and construction-related activities on the site poses an increased risk of grass fires that could in turn pose a threat to livestock, crops, wildlife and farmsteads in the area. In the process, farm infrastructure may also be damaged or destroyed and human lives threatened. The potential risk of grass fires was heightened by the windy conditions in the area, especially during the dry, windy winter months from May to October. In terms of potential mitigation measures, a fire-break should be constructed around the perimeter of the site prior to the commencement of the construction phase. In addition, fire-fighting equipment should be provided on site during the construction phase.

Increased risk of veld fires	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Region (3)	Local (2)
Probability	Probable (3)	Probable (3)
Duration	Medium term (2)	Short term (1)
Magnitude	High (3)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Negligible cumulative effects (1), provided losses are compensated for.	
Significance	Negative medium (33)	Negative low (9)
Can impacts be mitigated?	The mitigation measures include: <ul style="list-style-type: none"> A fire-break should be constructed around the perimeter of the site prior to the commencement of the construction phase; Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas; Contractor to ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high risk dry, windy winter months; Contractor to provide adequate firefighting equipment on-site, including a fire fighting vehicle; Contractor to provide fire-fighting training to selected construction staff; 	

	<ul style="list-style-type: none"> No construction staff, with the exception of security staff, to be accommodated on site over night; As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the firefighting costs borne by farmers and local authorities.
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OPERATIONAL PHASE

Direct impacts: During the operational phase the study area will serve as an electricity generation facility and the impacts are generally associated with soil erosion, change in land use, impacts associated with the surrounding land uses, increase in storm water runoff, increased consumption of water, visual intrusion, the generation of general waste, leakage of hazardous materials, and the change in the sense of place. The operational phase will also have a direct positive impact through the provision of permanent employment opportunities, the generation of additional electricity, the establishment of a community trust, financial implication to tourism in the area, and the development of infrastructure for the generation of clean, renewable energy. The abovementioned impacts are discussed in more detail below:

- Soil erosion** – The largest risk factor for soil erosion will be during the operational phase when the mining activity ensues and soil is left bare until rehabilitation is initiated. Erosion will be localized within the site boundary but will have a permanent effect that would stretch into the operational phase of the project. This will ultimately lead to the irretrievable commitment of this resource. The measurable effect of reducing erosion by utilizing mitigation measures may reduce possible erosion significantly.

Soil erosion	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local/Regional (2)	Local/Regional (2)
Probability	Definite (4)	Unlikely (1)
Duration	Long term (3)	Long term (3)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Significant loss of resource (3)	Marginal loss of resource (2)
Cumulative impact	Medium cumulative impact (3). Should these impacts occur, there will be a cumulative impact on the air and water resources in the study area in terms of pollution.	
Significance	Negative High (51)	Negative Low (26)
Can impacts be mitigated?	Yes, to avoid soil erosion it will be a good practice to not remove all the vegetation at once but to only clear the area as it becomes necessary and to implement concurrent rehabilitation. Also refer to section (f) of the EMP.	

- Change in land-use** – The use of the area for the construction and operation of the Diamond Alluvial and diamonds general mine will result in the area not being used for livestock grazing anymore. The impact on farm income due to the loss of grazing (only 5ha will be used for the mining area, the rest of the farm will still be used for grazing or other mining related activities) will be more than offset by the income from Rietput Delwery CC

Change in land use	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Definite (4)	Definite (4)
Duration	medium term (2)	medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Negligible cumulative impacts (1). Only 5 hectares will be used for the mining area. The rest of the farm will stay intact.	
Significance	Negative low (10)	Negative low (10)
Can impacts be mitigated?	<p>The proponent should establish a Rehabilitation Fund to be used to rehabilitate the area once the proposed facility has been decommissioned. The fund should be funded by revenue generated during the operational phase of the project. The motivation for the establishment of a Rehabilitation Fund is based on the experience in the mining sector where many mines on closure have not set aside sufficient funds for closure and decommissioning.</p> <p>Also refer to section (f) of the EMP.</p>	

- Generation of alternative land use income – Income generated through the alluvial diamond and diamond general mine will provide the farming enterprise with increased cash flow and rural livelihood, and thereby improve the financial sustainability of farming on site.

Generation of alternative land use income	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Positive	Positive
Geographical extent	Site (1)	Site (1)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	Medium (2)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resources (1)	No loss of resources (1)
Cumulative impact	Low cumulative impact (2).	
Significance	Positive Low (24)	Positive Low (24)
Can impacts be mitigated?	No mitigation required.	

- Increase in storm water runoff – The development will potentially result in an increase in storm water run-off that needs to be managed to prevent soil erosion, especially where vegetation will be cleared. Not all the vegetation should be removed at once. Vegetation corridors should be maintained within the subject area.

Increase in storm water runoff	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Unlikely (1)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	Low (1)

Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Medium cumulative impact (3) - Should these impacts occur, there will be a cumulative impacts on the wider area.	
Significance	Negative medium (30)	Negative low (13)
Can impacts be mitigated?	Yes. It is therefore important that all management actions and mitigation measures included in section (f) of the EMP. are implemented to ensure that these impacts do not occur	

- Increased consumption of water - Approximately 18 000 liters of water per hour will be required for the washing of the gravel in the rotary pan. The water will be sourced from groundwater sources.

Increased consumption of water	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Region (3)	Region (3)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	Medium (2)
Reversibility	Irreversible (4)	Irreversible (4)
Irreplaceable loss of resources	Marginal loss of resources (2)	Marginal loss of resources (2)
Cumulative impact	High cumulative impacts (4) - An additional demand on water sources could result in a significant cumulative impact with regards to the availability of water.	
Significance	Negative medium (40)	Negative medium (40)
Can impacts be mitigated?	Yes, management actions and mitigation measures related to the use of water are included in section (f) of the EMP.	

- Generation of waste – Approximately 15 Workers will be present on site from 7:00 – 17:00, Monday to Saturday. Sources of general waste will be waste food, packaging, paper, etc. General waste will be stored on the site and removed on a weekly basis by a contractor.

Generation of waste	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	Low (1)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Medium cumulative impact (3) - An additional demand for landfill space could result in significant cumulative impacts with regards to the availability of landfill space.	
Significance	Negative low (15)	Negative low (15)
Can impacts be mitigated?	Yes, management actions related to waste management are included in section (f) of the EMP.	

- **Leakage of hazardous materials** - The proposed mining activity will make use of machinery that use fuel and oil. Leakage of these oils and fuel can contaminate water supplies and must be prevented by constructing oil and diesel permeable bunds to ensure that any spills are suitably attenuated and not released into the environment.

Leakage of hazardous materials	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Unlikely (1)
Duration	Long term (3)	Long term (3)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	The impact would result in negligible to no cumulative effects (1)	
Significance	Negative medium (36)	Negative low (22)
Can impacts be mitigated?	Yes. It is therefore important that all management actions and mitigation measures included in the section (f) of EMPr are implemented to ensure that these impacts do not occur.	

- **Noise disturbance** - Mining activities will result in the generation of noise over a period of 3-5 years. Sources of noise are likely to include vehicles, the use of machinery such as backactors, rotary pans and people working on the site, as well as occasional blasting. The noise impact is unlikely to be significant as the closest homestead is more than 1km from the site; but mining activities should be limited to normal working days and some Saturdays and hours (7:00 – 17:00).

Temporary noise disturbance	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Definite (4)	Probable (3)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	The impact would result in negligible to no cumulative effects (1).	
Significance	Negative low (22)	Negative low (10)
Can impacts be mitigated?	Yes, management actions related to noise pollution are included in section (f) of the EMPr.	

Indirect impacts: The operational phase will have an indirect negative impact through the change in the sense of place and an indirect positive impact through the provision of additional electrical infrastructure.

- **Potential impact on tourism** – The tourism sector is regarded as an important economic sector in the NCP and MLM. The tourism potential of the area is linked to the areas natural resources, including the relatively undisturbed scenery and landscape. The impact of the proposed diamond alluvial mine on the areas sense of place with mitigation is likely to be low. The impact of the proposed mine on the tourism potential of the area and the MLM and NCP is therefore likely to be low.

Potential impacts on tourism	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	N/a	N/a
Cumulative impact	N/a	
Significance	Negative low (6)	Negative low (6)
Can impacts be mitigated?	No mitigation required	

DECOMMISSIONING PHASE (MINE CLOSURE AND REHABILITATION)

Direct impacts: Typically, the major social impacts associated with the decommissioning phase are linked to the loss of jobs and associated income. This has implications for the households who are directly affected, the communities within which they live. If infrastructures are removed after a 3/5 year period, the site will be returned to its natural state.

- Rehabilitation of the physical environment – The physical environment will benefit from the closure of the mine since the site will be restored to its natural state.

Rehabilitation of the physical environment	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Positive	Positive
Extent	Site (1)	Site (1)
Probability	Possible (2)	Probable (3)
Duration	Long term (3)	Long term (3)
Magnitude	Low (1)	Medium (2)
Reversibility	N/A	N/A
Irreplaceable loss of resources	N/A	N/A
Cumulative impact	The impact would result in negligible to no cumulative effects (1)	
Significance	Negative low (7)	Negative low (16)
Can impacts be mitigated?	No mitigation measures required.	

- Loss of employment - Given the relatively large number of people employed during the operational phase, the decommissioning of the facility has the potential to have a negative social impact on the local community.

Loss of employment	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Possible (2)
Duration	Medium term (2)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	The impact would result in negligible to no cumulative effects (1)	
Significance	Negative medium (30)	Negative low (18)

Can impacts be mitigated?	<p>The following mitigation measures are recommended:</p> <ul style="list-style-type: none"> • All structures and infrastructure associated with the proposed facility should be dismantled and transported off-site on decommissioning; • Rietput Delwery CC should establish an Environmental Rehabilitation Trust Fund to cover the costs of decommissioning and rehabilitation of disturbed areas.
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Indirect impacts: No indirect impacts are anticipated from the decommissioning phase of the proposed development.

- iv. **Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;**
 (Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

Method of environmental assessment

The environmental assessment aims to identify the various possible environmental impacts that could result from the proposed development. Different impacts need to be evaluated in terms of its significance and in doing so highlight the most critical issues to be addressed.

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence. Significance is calculated as shown in the Table below.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

Impact Rating System

Impact assessment must take account of the nature, scale and duration of impacts on the environment whether such impacts are positive or negative. Each impact is also assessed according to the following project phases:

- Construction
- Operation
- Decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact should be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance should also be included. The rating system is applied to the potential impacts on the receiving environment and includes an objective evaluation of the mitigation of the impact. In assessing the significance of each impact the following criteria is used:

Table: The rating system

NATURE		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be experienced.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact.		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
DURATION		
This describes the duration of the impacts. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase (0 – 1 years), or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered indefinite.
INTENSITY/ MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/ component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.

4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
REVERSIBILITY		
This describes the degree to which an impact can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts. A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The calculation of the significance of an impact uses the following formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity. The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact significance rating	Description
6 to 28	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.

29 to 50	Positive medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative high impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive high impact	The anticipated impact will have significant positive effects.
74 to 96	Negative very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive very high impact	The anticipated impact will have highly significant positive effects.

v. 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.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

Positive and negative impacts of the proposed activity

The positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, socio economic, heritage and cultural aspects over all three different phases of the project.

Impacts during the construction phase

During the construction phase the following activities will have various potential impacts on the biophysical and socio-economic environment:

- Listing Notice GNR 983, Activity 27: "The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation."

During the construction phase minor negative impacts are foreseen over the short term. The latter refers to a period of months. The potentially most significant impacts relate to the impacts on the fauna and flora, soil, geology, existing service infrastructure, surface water (storm water), socio-economic impacts such as the provision of temporary employment and other economic benefits, and the impacts on heritage resources.

Impacts during the operational phase

During the operational phase the study area will serve as a diamond alluvial mine and the potential negative impacts relate to:

- Listing Notice GNR 983, Activity 21 : "Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 Of 2002), including associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource."

The potential impacts will take place over a period of 3-5 years. The negative impacts are generally associated with impacts on the soils, geology, surface water (storm water), and visual impacts. The operational phase will have a direct positive impact through the provision of employment opportunities and the generation of income to the local community.

Decommissioning phase (mine closure and rehabilitation)

In the case of the proposed facility the mine closure and rehabilitation phase is likely to involve the disassembly and closure of the mine. However the physical environment will benefit from the closure of the mine since the site

will be restored to its natural state. The decommissioning phase will however result in the loss of permanent employment. However, skilled staff will be eminently employable and a number of temporary jobs will also be created in the process

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

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

No adverse environmental or social impacts associated with the establishment of a diamond mine have been identified through the Basic Assessment process. Mitigation measures as set out in the Environmental Management Programme (EMPr) attached in Part B must be implemented in order to minimise any potential impacts.

All comments received during the review period of the draft Basic Assessment report, as well as response provided will be captured and recorded within the Comments and Response Report and will be attached in the final Basic Assessment Report.

vii. Motivation where no alternative sites were considered.

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. No other properties have at this stage been secured by Rietput Delwery CC near Windsorton on a certain portion of 5 hectares on Portion 7 (Oskamp) of the farm Slypklip South Estate 36; Registration Division: Kimberley RD, Northern Cape Province is preferred due to the sites underlying alluvial diamond and diamond general bearing gravel (i.e. to facilitate the movement of machinery, equipment, infrastructure).

viii. Statement motivating the alternative development location within the overall site. (Provide a statement motivating the final site layout that is proposed)

Design alternatives were considered throughout the planning and design phase (i.e. where is the rock bed located?). In this regard discussions on the design were held between the EAP and the developer. The layout follows the limitations of the site and aspects such as, roads, site offices and workshop area as well as fencing.

i) 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. (Including (i) a description of all environmental issues and risks that are identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

Process for the identification of key issues

The methodology for the identification of key issues aims, as far as possible, to provide a user-friendly analysis of information to allow for easy interpretation.

- **Checklist:** The checklist consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts.

- **Matrix:** The matrix analysis provides a holistic indication of the relationship and interaction between the various activities, development phases and the impact thereof on the environment. The method aims at providing a first order cause and effect relationship between the environment and the proposed activity. The matrix is designed to indicate the relationship between the different stressors and receptors which leads to specific impacts. The matrix also indicates the specialist studies, which are submitted as part of the BAR in order to address the potentially most significant impacts.

Checklist analysis

The purpose of the site visit is to ensure a proper analysis of the site specific characteristics of the study area. The table below provides a checklist, which is designed to stimulate thought regarding possible consequences of specific actions and so assist scoping of key issues. It consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts. The table highlights certain issues, which are further analysed in matrix.

Table: Environmental checklist

QUESTION	YES	NO	Un-sure	Description
1. Are any of the following located on the site earmarked for the development?				
I. A river, stream, dam or wetland	X			The farm consist of low potential grazing land, canals and runs adjacent to the Vaal River. However, the proposed 5 ha mining activities is not situated close to the river. A WULA will not be needed for this application as the portion (5ha) is not near any water course
II. A conservation or open space area		X		None.
III. An area that is of cultural importance			X	From the perspective of Mr Misdorp, no graves are on the site, If anything of heritage significance is found PHRA and/or SAHRA will be contacted immediately and work will stop.
IV. Site of geological significance		X		None.
V. Areas of outstanding natural beauty		X		None.
VI. Highly productive agricultural land		X		The mine will have a low negative impact on agricultural potential in terms of cattle production in the area, and no negative impact on crop production.
VII. Floodplain		X		None.
VIII. Indigenous forest		X		None.
IX. Grass land		X		None.
X. Bird nesting sites		X		None.
XI. Red data species		X		None.
XII. Tourist resort		X		None.
2. Will the project potentially result in potential?				
I. Removal of people		X		None.
II. Visual Impacts	X			The visual impact will be managed

III. Noise pollution	X			The alluvial diamond mine will have low noise pollution and will only be operational Monday to Friday 7 AM to 5 PM and some Saturdays.
IV. Construction of an access road		X		None. Access will be obtained from a gravel road off N12/R374
V. Risk to human or valuable ecosystems due to explosion/fire/ discharge of waste into water or air.		X		None
VI. Accumulation of large workforce (>50 manual workers) into the site.		X		Approximately 15 employment opportunities will be created during the construction phase of the project.
VII. Utilisation of significant volumes of local raw materials such as water, wood etc.	X			The estimated maximum amount of water required per hour is 18m ³ .
VIII. Job creation		X		Approximately 15 employment opportunities will be created during the construction and operational phases.
IX. Traffic generation		X		Traffic generation will be minimal.
X. Soil erosion		X		None. The soil has a low erosion potential.
XI. Installation of additional bulk telecommunication transmission lines or facilities		X		None.
3. Is the proposed project located near the following?				
I. A river, stream, dam or wetland	X			Vaal River & Leeurivier
II. A conservation or open space area		X		None.
III. An area that is of cultural importance		X		None.
IV. A site of geological significance		X		None.
V. An area of outstanding natural beauty		X		None.
VI. Highly productive agricultural land		X		None.
VII. A tourist resort		X		None.
VIII. A formal or informal settlement		X		None.

Matrix analysis

The matrix describes the relevant listed activities, the aspects of the development that will apply to the specific listed activity, a description of the environmental issues and potential impacts, the significance and magnitude of the potential impacts, and the mitigation of the potential impacts. The matrix also highlights areas of particular concern, which requires more in depth assessment. Each cell is evaluated individually in terms of the nature of the impact, duration and its significance – should no mitigation measures be applied. This is important since many impacts would not be considered insignificant if proper mitigation measures were implemented. The matrix also provides an indication if mitigation measures are available.

In order to conceptualise the different impacts the matrix specify the following:

- **Stressor:** Indicates the aspect of the proposed activity, which initiates and cause impacts on elements of the environment.

- **Receptor:** Highlights the recipient and most important components of the environment affected by the stressor.
- **Impacts:** Indicates the net result of the cause-effect between the stressor and receptor.
- **Mitigation:** Impacts need to be mitigated to minimise the effect on the environment.

j) Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

Matrix Analysis

LISTED ACTIVITY (The Stressor)	ASPECTS OF THE DEVELOPMENT /ACTIVITY	POTENTIAL IMPACTS		SIGNIFICANCE AND MAGNITUDE OF POTENTIAL IMPACTS			MITIGATION OF POTENTIAL IMPACTS	SPECIALIST STUDIES / INFORMATION	
		Receptors	Impact description	Minor	Major	Duration	Possible Mitigation		
CONSTRUCTION PHASE									
<p><u>Activity 27 (Regulation 983):</u> "The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation."</p>	<p><u>Site clearing and preparation</u> Areas earmarked for mining will need to be cleared, topsoil will be stockpiled separately.</p>	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> Loss or fragmentation of indigenous natural vegetation. Loss of sensitive species. Loss or fragmentation of habitats. 		-	S	Yes	-
			Air	<ul style="list-style-type: none"> Air pollution due to the increase of traffic of construction vehicles. 	-		S	Yes	-
			Soil	<ul style="list-style-type: none"> Soil degradation, including erosion. Loss of topsoil. Disturbance of soils and existing land use (soil compaction). 		-	S	Yes	-
			Geology	<ul style="list-style-type: none"> It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa. 		-	S	Yes	-
			Existing services infrastructure	<ul style="list-style-type: none"> Generation of waste that need to be accommodated at a licensed landfill site. Generation of sewage that need to be accommodated by the local sewage plant. 		-	S	Yes	-
			Ground water	<ul style="list-style-type: none"> Pollution due to construction vehicles. 	-		S	Yes	-
			Surface water	<ul style="list-style-type: none"> Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (pans). 		-	S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"> Job creation. Business opportunities. Skills development. 		+	S	Yes	-
			Visual landscape	<ul style="list-style-type: none"> Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility. 	-		S	Yes	-
			Traffic volumes	<ul style="list-style-type: none"> Increase in construction vehicles. 	-		S	Yes	-

			Health & Safety	<ul style="list-style-type: none"> Air/dust pollution. Road safety. Increased risk of veld fires. 		-	S	Yes	-
			Noise levels	<ul style="list-style-type: none"> The generation of noise as a result of construction vehicles, the use of machinery such as drills and people working on the site. 	-		S	Yes	-
			Tourism industry	<ul style="list-style-type: none"> Since there are no tourism facilities in close proximity to the site, the proposed activities will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-
			Heritage resources	<ul style="list-style-type: none"> Removal or destruction of archaeological and/or paleontological sites. Removal or destruction of buildings, structures, places and equipment of cultural significance. Removal or destruction of graves, cemeteries and burial grounds. 		-	S	Yes	-
<p>Activity 27 (Regulation 983): <i>"The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation."</i></p>	<p>Site clearing and preparation Certain areas of the site will need to be cleared of vegetation. This will inevitably result in the removal of indigenous vegetation located on the site.</p>	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> Loss or fragmentation of indigenous natural vegetation. Loss of sensitive species. Loss or fragmentation of habitats. 		-	S	Yes	-
			Air quality	<ul style="list-style-type: none"> Air pollution due to the increase of traffic. 	-		S	Yes	-
			Soil	<ul style="list-style-type: none"> Soil degradation, including erosion. Disturbance of soils and existing land use (soil compaction). Loss of agricultural potential (low significance relative to agricultural potential of the site). 	-		S	Yes	-
			Geology	<ul style="list-style-type: none"> It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa. 	N/A	N/A	N/A	N/A	-
			Existing services infrastructure	<ul style="list-style-type: none"> Generation of waste that need to be accommodated at a licensed landfill site. Generation of sewage that need to be accommodated by the local sewage plant. 	-		S	Yes	-
			Ground water	<ul style="list-style-type: none"> Pollution due to construction vehicles. 	-		S	Yes	-
			Surface water	<ul style="list-style-type: none"> Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (pans). 	-		S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"> Job creation. Skills development. 		+	S	N/A	-
			Visual landscape	<ul style="list-style-type: none"> Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility due to dust. 	-		S	Yes	-

			Traffic volumes	<ul style="list-style-type: none"> Increase in construction vehicles. 	-		S	Yes	-
			Health & Safety	<ul style="list-style-type: none"> Air/dust pollution. Road safety. 		-	S	Yes	-
			Noise levels	<ul style="list-style-type: none"> The generation of noise as a result of construction vehicles, and people working on the site. 	-		S	Yes	-
			Tourism industry	<ul style="list-style-type: none"> Since there are no tourism facilities in close proximity to the site, the proposed activity will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-
			Heritage resources	<ul style="list-style-type: none"> Removal or destruction of archaeological and/or paleontological sites. Removal or destruction of buildings, structures, places and equipment of cultural significance. Removal or destruction of graves, cemeteries and burial grounds. 	N/A	N/A	N/A	N/A	-
OPERATIONAL PHASE									
<p><u>Activity 21 (Regulation 983): "Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 Of 2002), including associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource."</u></p>	<p>The key components of the proposed project are described below:</p> <ul style="list-style-type: none"> <u>Supporting Infrastructure</u> - A control facility with basic services such as water and electricity will be constructed on the site and will have an approximate footprint 50m² or less. Other supporting infrastructure includes a site office and workshop area. <u>Roads</u> - Access will be obtained from N12/R374 to a local gravel road. All site roads will require a width of approximately 10m. <u>Fencing</u> - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm. 	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> Fragmentation of habitats. Establishment and spread of declared weeds and alien invader plants (operations). 	-		L	Yes	-
			Air quality	<ul style="list-style-type: none"> Air pollution due to the mining activity 	N/A	N/A	N/A	N/A	-
			Soil	<ul style="list-style-type: none"> Soil degradation, including erosion. Disturbance of soils and existing land use (soil compaction). Loss of agricultural potential (low significance relative to agricultural potential of the site). 		-	L	Yes	-
			Geology	<ul style="list-style-type: none"> Collapsible soil. Seepage (shallow water table). Active soil (high soil heave). Erodible soil. The presence of undermined ground. Instability due to soluble rock. Steep slopes or areas of unstable natural slopes. Areas subject to seismic activity. Areas subject to flooding. 		-	S	Yes	-
			Existing services infrastructure	<ul style="list-style-type: none"> Generation of waste that need to be accommodated at a licensed landfill site. Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewerage plant. Increased consumption of water. Approximately 18 000 L per hour 		-	L	Yes	-
			Ground water	<ul style="list-style-type: none"> Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies. 	-		L	Yes	-

			Surface water	<ul style="list-style-type: none"> Increase in storm water runoff. The development will potentially result in an increase in storm water run-off that needs to be managed to prevent soil erosion. Destruction of watercourses (pans). Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies. 		-	L	Yes	-	
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"> Job creation. Security guards will be required for 24 hours every day of the week and general laborers will also be required for the cleaning of the panels. Skills development. 		+	L	Yes	-	
			Visual landscape	<ul style="list-style-type: none"> Change in land-use/sense of place. The site is characterized by open veldt with a rural agricultural sense of place. The use of the area for the mining activity will result in the area not being used for livestock grazing anymore until rehabilitated. 		-	L	Yes	-	
			Traffic volumes	<ul style="list-style-type: none"> Increase in vehicles collecting diamond bins for distribution. 	-		S	Yes	-	
			Health & Safety	<ul style="list-style-type: none"> Air/dust pollution. Road safety. 	N/A	N/A	N/A	N/A	-	
			Noise levels	<ul style="list-style-type: none"> The proposed development will result in noise pollution during the operational phase. 	-	-	S	Yes	-	
			Tourism industry	<ul style="list-style-type: none"> Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-	
			Heritage resources	<ul style="list-style-type: none"> It is not foreseen that the proposed activity will impact on heritage resources or vice versa. 	N/A	N/A	N/A	N/A	-	
DECOMMISSIONING PHASE										
-	<p><u>Mine closure</u> During the mine closure the Mine and its associated infrastructure will be dismantled.</p> <p><u>Rehabilitation of biophysical environment</u> The biophysical environment will be rehabilitated.</p>	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> Re-vegetation of exposed soil surfaces to ensure no erosion in these areas. 	+		L	Yes	-	
			Air quality	<ul style="list-style-type: none"> Air pollution due to the increase of traffic of construction vehicles. 	-		S	Yes	-	
			Soil	<ul style="list-style-type: none"> Backfilling of all voids Placing of topsoil on backfill 	+		L	Yes	-	
			Geology	<ul style="list-style-type: none"> It is not foreseen that the decommissioning phase will impact on the geology of the site or vice versa. 	N/A	N/A	N/A	N/A	-	
			Existing services infrastructure	<ul style="list-style-type: none"> Generation of waste that need to be accommodated at the local landfill site. Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. Increase in construction vehicles. 	-		S	Yes	-	
			Ground water	<ul style="list-style-type: none"> Pollution due to construction vehicles. 	-		S	Yes	-	
			Surface water	<ul style="list-style-type: none"> Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (wetlands & pans). 	-		S	Yes	-	
		SOCI AL/EC	Local unemployment rate	<ul style="list-style-type: none"> Loss of employment. 		-	L	Yes	-	

		Visual landscape	<ul style="list-style-type: none"> Potential visual impact on visual receptors in close proximity to proposed facility. 	-		S	Yes	-
		Traffic volumes	<ul style="list-style-type: none"> Increase in construction vehicles. 	-		S	Yes	-
		Health & Safety	<ul style="list-style-type: none"> Air/dust pollution. Road safety. Increased crime levels. The presence of mine workers on the site may increase security risks associated with an increase in crime levels as a result of influx of people in the rural area. 	-			Yes	-
		Noise levels	<ul style="list-style-type: none"> The generation of noise as a result of construction vehicles, the use of machinery and people working on the site. 	-		S	Yes	-
		Tourism industry	<ul style="list-style-type: none"> Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-
		Heritage resources	<ul style="list-style-type: none"> It is not foreseen that the decommissioning phase will impact on any heritage resources. 	N/A	N/A	N/A	N/A	-

(N/A) No impact (+) Positive Impact (-) Negative Impact (S) Short Term (M) Medium Term (L) Long Term

k) Summary of specialist reports.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):-

No specialist studies were undertaken for this Basic Assessment

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.

I) Environmental impact statement

(i) Summary of the key findings of the environmental impact assessment;

This section provides a summary of the assessment and conclusions drawn from the proposed mining area. In doing so, it draws on the information gathered as part of the basic assessment process and the knowledge gained by the environmental consultant during the course of the process and presents an informed opinion on the environmental impacts associated with the proposed project. The following conclusions can be drawn for the proposed mining activity:

- Potential impacts on land use: The farm is currently utilised as low potential cattle grazing. The activity will only comprise 5 Ha, the total area of the farm is more than 61.5000Ha in extent, so the area will not have any significant impact on the land use nor will it change the sense of place of the area.
- Potential social impacts: The presence of construction workers poses a potential risk to family structures and social networks. While the presence of construction workers does not in itself constitute a social impact, the manner in which construction workers conduct themselves can impact on local communities. The most significant negative impact is associated with the disruption of existing family structures and social networks.
- Potential negative impacts: (noise, dust, soil degradation, storm water, traffic, health and safety) associated with the operation of the facility are expected to be of low-medium impact, of medium terms and site specific. These can be mitigated or negated through the implementation of practical and appropriate mitigation measures.
- Positive impacts: The mining of alluvial diamonds and diamonds general will have socio-economic benefit to the area.

All possible negative impacts and risks that have been identified in this report can be effectively mitigated and managed by implementing the migratory measures as set out in the Environmental Management Programme (EMPr) attached in Part B. It is therefore recommended that the environmental authorisation for the mining permit be granted.

(ii) Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers.

Refer to Locality Map attached in **Appendix B**.

(iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

There are regional socio economic benefits due to the alluvial diamonds and diamonds general being mined in the Northern Cape Province. All possible negative impacts and risks that have been identified in this report can be effectively mitigated and managed by implementing the mitigation measures as set out in the Environmental Management Programme (EMPr) attached in Part B. No significantly adverse social or environmental impacts are anticipated.

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

Management objectives include:

- Ensure that the mining activity does not cause pollution to the environment or harm to persons.
- Minimise production of waste.
- All mining activities must be conducted in a manner that minimises noise impact, litter, environmental degradation and health hazards i.e. injuries.
- The mine must be kept neat and tidy during waste handling to prevent unsightliness and accidents.

Expected outcomes include:

- Minimum impacts on the environment as a result of alluvial diamond mining.
- Compliance with legislative requirements.
- Mine is neat and tidy and well managed.

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

- The operational activities and relevant rehabilitation of disturbed areas should be monitored against the improved EMPr and all other relevant environmental legislation.
- A copy of the EMP should be made available onsite at all times.
- Implementation of the proposed mitigation measures set out in the EMPr.

o) Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

The uncertainties in results are mostly related to the availability of information, time available to gather the relevant information as well as the sometimes subjective nature of the assessment methodology. In terms of addressing the key issues the EAP is satisfied that there are no major gaps in knowledge and that the specialist reports provide sufficient information to conduct the significance rating and provide the environmental authority with sufficient information to make an informed decision.

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

i) Reasons why the activity should be authorized or not.

It is the opinion of the EAP that the activity may be authorised.

Based on the outcomes of other diamond mines in the area, the possibility to encounter further Diamond Reserves were identified.

The proposed mining area is targeted as, historically, several alluvial diamond occurrences are known in the area, and a number of these have been exploited in the past. There are also various alluvial diamond operations within the vicinity of the exploration area.

No other properties have been secured by the applicant and the site is therefore regarded as the preferred site, and alternatives are not considered.

The option of not approving the activities will result in a significant loss to valuable diamond deposits being exploited. And all economic benefits will be lost.

ii) Conditions that must be included in the authorisation

- The operational activities and relevant rehabilitation of disturbed areas should be monitored against the improved EMP and all other relevant environmental legislation.
- A copy of the EMP should be made available onsite at all times.
- Implementation of the proposed mitigation measures set out in the EMP.

The EMP should be binding on all managers and contractors operating/utilizing the site.

q) Period for which the Environmental Authorisation is required.

For the lifetime of the mine, 5-7 years.

- r) **Undertaking: Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMP and is applicable to both the Basic assessment report and the Environmental Management Programme report.**

The undertaking required to meet the requirements of this section is provided at the end of the EMP and is applicable to both the Basic Assessment report and the Environmental Management Programme report.

s) Financial Provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

i) Explain how the aforesaid amount was derived.

The closure cost estimate provided above is aligned with the Guideline Document for the Evaluation of Quantum of Closure related Financial Provision Provided by a Mine, by the DMR (January, 2005). The amount was calculated by Milnex 189 CC.

- ii) **Confirm that this amount can be provided for from operating expenditure.** (Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

Financial Guarantee

The financial guarantee for the rehabilitation for land disturbed by Rietput Delwery CC as submitted together with the application for the mining permit.

Rehabilitation Fund

Rietput Delwery CC will also make provision for rehabilitation during closure by establishing a rehabilitation trust.

CALCULATION OF THE QUANTUM

Applicant: Rietput Delwery CC
 Evaluator:

Ref No.: NC30/5/1/3/2/10529MP
 Date: 19-Jul-16

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m3	50	12,84	1	1	642
2 (A)	Demolition of steel buildings and structures	m2	0	178,87	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	263,59	1	1	0
3	Rehabilitation of access roads	m2	100	32	1	1	3200
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	310,66	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	169,45	1	1	0
5	Demolition of housing and/or administration facilities	m2	25	357,73	1	1	8943,25
6	Opencast rehabilitation including final voids and ramps	ha	1	182 063,65	0,52	1	94673,098
7	Sealing of shafts adits and inclines	m3	0	96,02	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	125 016,15	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	155 705,36	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	452 242,17	1	1	0
9	Rehabilitation of subsided areas	ha	0	104 682,20	1	1	0
10	General surface rehabilitation	ha	0,1	99 033,88	1	1	9903,388
11	River diversions	ha	0	99 033,88	1	1	0
12	Fencing	m	20	112,97	1	1	2259,4
13	Water management	ha	0	37 655,47	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0,1	13 179,41	1	1	1317,941
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							120939,077

1	Preliminary and General	14512,68924	weighting factor 2	14512,68924
			1	
2	Contingencies	12093,9077		12093,9077
Subtotal 2				147545,67

VAT (14%)	20656,39
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Grand Total	168202
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t) Specific Information required by the competent Authority

i) 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). the EIA report must include the:-

(1) Impact on the socio-economic conditions of any directly affected person. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix**

The alluvial diamond mine will not impact directly on any socio-economic aspects. Indirect socio-economic benefits are expected to be associated with the creation of employment.

(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

The alluvial diamond and diamond general mine will not impact on any heritage estate referred to in section 3(2) of the National Heritage Resources Act.

In terms of the National Heritage Resource Act no 25 of 1999. Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure

older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA must be contacted immediately and work will stop.

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

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as **Appendix 4**).

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. No other properties have at this stage been secured by Rietput Delwery CC near Windsorton on a certain portion of 5 hectares on Portion 7 (Oskamp) of the farm Slypklip South Estate 36; Registration Division: Kimberley RD, Northern Cape Province is preferred due to the sites underlying alluvial diamond and diamond general bearing gravel (i.e. to facilitate the movement of machinery, equipment, infrastructure). The specific site has been chosen for its mineral resources thus making an alternative site selection null and void.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Draft environmental management programme.

- a) **Details of the EAP**, (Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

It is hereby confirmed that the requirements for the provision of the details and expertise of the EAP are contained in Part A, section 1(a) as required. The Curriculum Vitae for the responsible EAP is contained in **Appendix 2**.

- b) **Description of the Aspects of the Activity** (Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).

It is hereby confirmed that the requirements to describe the aspects of the activity that are required by the draft EMP is already included in Part A, section 1(h).

c) **Composite Map**

(Provide a map (**Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)

Refer to Locality Map, attached as in Appendix 3.

d) **Description of Impact management objectives including management statements**

- i) **Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described)

Closure objectives for the alluvial diamond mine will aim to ensure that the residual post-closure impacts be minimized and be acceptable to relevant parties. To achieve these closure objectives, the following will be implemented:

- All mining related infrastructure, foundations and concrete areas will be decommissioned, removed from the site and appropriately disposed of. Reclaimable structures such as metal, electrical installations or equipment will be sold for re-use or as scrap.
- All disturbed areas within the site not already vegetated will be re-vegetated with appropriate indigenous, ecologically adapted species appropriate to the area and the final land use as soon as possible after operation ceases. Progress of vegetation growth/establishment, stability and drainage/erosion will be monitored and, in the event of adverse trends being identified, corrective measures will be implemented.
- Vegetation monitoring will consider, inter alia, the establishment of perennial ground cover and infestation by alien invasive plant species. The encroachment of indigenous vegetation into the area will be used as an indication of a stable, self-sustaining vegetation cover with little risk of retrogressing to a situation where air and water pollution may occur.

ii) **Volumes and rate of water use required for the operation.**

10 000 – 18 000 L per hour required for the wash plant.

iii) **Has a water use licence has been applied for?**

A water use license application will be applied for, if required.

iv) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>E.g. For mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams & boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc)</p>	<p>(of operation in which activity will take place. State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure).</p>	<p>(volumes, tonnages and hectares or m²)</p>	<p>(describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p>	<p>(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>	<p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:- Upon cessation of the individual activity Or Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>
<p>Clearance of vegetation</p>	<p>Construction Phase</p>	<p>5 Ha</p>	<ol style="list-style-type: none"> 1. Site clearing must take place in a phased manner, as and when required. 2. Areas which are not to be constructed on within two months must not be cleared to reduce erosion risks. 3. The area to be cleared must be clearly demarcated and this footprint strictly maintained. 4. Spoil that is removed from the site must be removed to an approved spoil site or a licensed landfill site. 5. The necessary silt fences and erosion control measures must be 	<p>Compliance with Duty of Care as detailed within NEMA</p>	<p>Duration of operations on the mine</p>

			implemented in areas where these risks are more prevalent.		
Construction of roads	Construction and Operational Phase	+ - 500m	<ol style="list-style-type: none"> 1. Planning of access routes to the site for construction purposes shall be done in conjunction with the Contractor and the Landowner. All agreements reached should be documented and no verbal agreements should be made. The Contractor shall clearly mark all access roads. Roads not to be used shall be marked with a "NO ENTRY for construction vehicles" sign. 2. Construction routes and required access roads must be clearly defined. 3. Damping down of the un-surfaced roads must be implemented to reduce dust and nuisance. 4. Soils compacted by construction shall be deep ripped to loosen compacted layers and re-graded to even running levels. 5. The contractor must ensure that damage caused by related traffic to the gravel access road off the R370 is repaired continuously. The costs associated with the repair must be borne by the contractor; 6. Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis; 7. All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits. 	Compliance with Duty of Care as detailed within NEMA	Duration of operations on the mine

<p>Mining of Diamonds Alluvial and Diamonds general – Soils and geology</p>	<p>Operational Phase</p>	<p>5 Ha</p>	<ol style="list-style-type: none"> 1. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil, and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas. 2. Care must be taken not to mix topsoil and subsoil during stripping. 3. The topsoil must be conserved on site in and around the pit area. 4. Subsoil and overburden in the mining area should be stockpiled separately to be returned for backfilling in the correct soil horizon order. 5. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases. 6. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding. 7. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof 	<p>Compliance with Duty of Care as detailed within NEMA</p>	<p>Duration of operations on the mine</p>
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			<p>from an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager.</p> <p>8. The impact on the geology will be permanent. There is no mitigation measure.</p>		
Mining of Diamonds Alluvial and Diamonds general – excavations and blasting	Operational Phase	5 Ha	<ol style="list-style-type: none"> 1. The mining activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development. 2. Mine, pans, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed in to the system. 3. Truck traffic should be routed away from noise sensitive areas, where possible. 4. Noise levels must be kept within acceptable limits. 5. Noisy operations should be combined so that they occur where possible at the same time. 6. Mine workers to wear necessary ear protection gear. 7. Noisy activities to take place during allocated hours. 8. Noise from labourers must be controlled. 	Compliance with Duty of Care as detailed within NEMA	Duration of operations on the mine

			<p>9. Noise suppression measures must be applied to all equipment. Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from the site.</p> <p>10. The Contractor must take measures to discourage labourers from loitering in the area and causing noise disturbance. Where possible labour shall be transported to and from the site by the Contractor or his Sub-Contractors by the Contractors own transport.</p> <p>11. Implementation of enclosure and cladding of processing plants.</p> <p>12. Applying regular and thorough maintenance schedules to equipment and processes. An increase in noise emission levels very often is a sign of the imminent mechanical failure of a machine.</p>		
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e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ());

<p>ACTIVITY (whether listed or not listed).</p> <p>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).</p>	<p>POTENTIAL IMPACT</p> <p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)</p>	<p>ASPECTS AFFECTED</p>	<p>PHASE In which impact is anticipated</p> <p>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)</p>	<p>MITIGATION TYPE</p> <p>(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)</p> <p>E.g.</p> <ul style="list-style-type: none"> • Modify through alternative method. • Control through noise control • Control through management and monitoring • Remedy through rehabilitation.. 	<p>STANDARD TO BE ACHIEVED</p> <p>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.</p>
<p>Clearance of vegetation</p>	<p>Loss or fragmentation of habitats</p>	<p>Fauna & flora</p>	<p>Construction & Operational Phase</p>	<p>Existing vegetation</p> <ol style="list-style-type: none"> 1. Vegetation removal must be limited to the mining site. 2. Vegetation to be removed as it becomes necessary rather than removal of all vegetation throughout the site in one step. 3. No vegetation to be used for firewood. 4. Exotic and invasive plant species should not be allowed to establish, if the development is approved. <p>Rehabilitation</p> <ol style="list-style-type: none"> 5. All damaged areas shall be rehabilitated upon completion of the contract. 6. Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to construction. 	<p>Minimisation of impacts to acceptable limits</p>

				<p>7. All natural areas impacted during construction must be rehabilitated with locally indigenous grasses typical of the representative botanical unit.</p> <p>8. Rehabilitation must take place in a phased approach as soon as possible.</p> <p>9. Rehabilitation process must make use of species indigenous to the area. Seeds from surrounding seed banks can be used for re-seeding.</p> <p>10. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.</p> <p>11. Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.</p> <p>Demarcation of mining area</p> <p>12. All plants not interfering with mining operations shall be left undisturbed clearly marked and indicated on the site plan.</p> <p>13. The mining area must be well demarcated and no construction activities must be allowed outside of this demarcated footprint.</p> <p>14. Vegetation removal must be phased in order to reduce impact of construction.</p> <p>15. Site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas.</p> <p>16. Strict and regular auditing of the mining process to ensure containment of the mining and laydown areas.</p> <p>17. Soils must be kept free of petrochemical solutions that may be kept on site during construction. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.</p> <p>Utilisation of resources</p>	
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				<p>18. Gathering of firewood, fruit, muti plants, or any other natural material onsite or in areas adjacent to the site is prohibited unless with prior approval of the ECO.</p> <p>Exotic vegetation</p> <p>19. Alien vegetation on the site will need to be controlled.</p> <p>20. The Contractor should be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.</p> <p>21. The spread of exotic species occurring throughout the site should be controlled.</p> <p>Herbicides</p> <p>22. Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used.</p> <p>23. The use of pesticides and herbicides on the site must be discouraged as these impact on important pollinator species of indigenous vegetation.</p> <p>Fauna</p> <p>24. Rehabilitation to be undertaken as soon as possible after mining has been completed.</p> <p>25. No trapping or snaring to fauna on the construction site should be allowed.</p> <p>26. No faunal species must be disturbed, trapped, hunted or killed by maintenance staff during any routine maintenance at the development.</p>	
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<p>Mining of Diamonds Alluvial and Diamonds general – excavations and blasting</p>	<p>Loss of topsoil</p>	<p>Soil</p>	<p>Construction & Operational Phase</p>	<ol style="list-style-type: none"> 1. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil, and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas. 2. Care must be taken not to mix topsoil and subsoil during stripping. 3. The topsoil must be conserved on site in and around the pit area. 4. Subsoil and overburden in the mining area should be stockpiled separately to be returned for backfilling in the correct soil horizon order. 5. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases. 6. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding. 7. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof from an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager. <p>Establish an effective record keeping system for each area where soil is disturbed for mining purposes. These records should be included in environmental performance reports, and should include all the records below.</p>	<p>Minimisation of impacts to acceptable limits</p>
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				<ul style="list-style-type: none"> • Record the GPS coordinates of each area. • Record the date of topsoil stripping. • Record the GPS coordinates of where the topsoil is stockpiled. • Record the date of cessation mining activities at the particular site. • Photograph the area on cessation of mining activities. • Record date and depth of re-spreading of topsoil. • Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time. 	
	Erosion	Soil Air Water	Construction & Operational Phase	<ol style="list-style-type: none"> 1. An effective system of run-off control should be implemented, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion. 2. Periodical site inspection should be included in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records the occurrence of any erosion on site or downstream. 3. Wind screening and stormwater control should be undertaken to prevent soil loss from the site. 4. The use of silt fences and sand bags must be implemented in areas that are susceptible to erosion. 5. Other erosion control measures that can be implemented are as follows: <ul style="list-style-type: none"> ○ Brush packing with cleared vegetation ○ Mulch or chip packing ○ Planting of vegetation ○ Hydroseeding/hand sowing 	Minimisation of impacts to acceptable limits

				<ol style="list-style-type: none"> 6. Sensitive areas need to be identified prior to construction so that the necessary precautions can be implemented. 7. All erosion control mechanisms need to be regularly maintained. 8. Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces. 9. Retention of vegetation where possible to avoid soil erosion. 10. Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time. 11. Re-vegetation of disturbed surfaces should occur immediately after construction activities are completed. This should be done through seeding with indigenous grasses. 12. No impediment to the natural water flow other than approved erosion control works is permitted. 13. To prevent stormwater damage, the increase in stormwater run-off resulting from construction activities must be estimated and the drainage system assessed accordingly. A drainage plan must be submitted to the Engineer for approval and must include the location and design criteria of any temporary stream crossings. 14. Stockpiles not used in three (3) months after stripping must be seeded to prevent dust and erosion. 	
	Air Pollution	Air	Construction & Operational Phase	<p>Dust control</p> <ol style="list-style-type: none"> 1. Wheel washing and damping down of un-surfaced and un-vegetated areas. 2. Retention of vegetation where possible will reduce dust travel. 3. Clearing activities must only be done during agreed working times and permitting weather 	Minimisation of impacts to acceptable limits

				<p>conditions to avoid drifting of sand and dust into neighbouring areas.</p> <ol style="list-style-type: none"> 4. Damping down of all exposed soil surfaces with a water bowser or sprinklers when necessary to reduce dust. 5. The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the neighbouring communities. 6. A speed limit of 30km/h must not be exceeded on site. 7. Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor. 8. Any dirt roads that are utilised by the workers must be regularly maintained to ensure that dust levels are controlled. <p>Odour control</p> <ol style="list-style-type: none"> 9. Regular servicing of vehicles in order to limit gaseous emissions. 10. Regular servicing of onsite toilets to avoid potential odours. <p>Rehabilitation</p> <ol style="list-style-type: none"> 11. The Contractor should commence rehabilitation of exposed soil surfaces as soon as practical after completion of earthworks. <p>Fire prevention</p> <ol style="list-style-type: none"> 12. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires. 13. The Contractor shall have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process. 	
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	Noise		Construction & Operational Phase	<ol style="list-style-type: none"> 1. The mining activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development. 2. Mine, crushers, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed in to the system. 3. Truck traffic should be routed away from noise sensitive areas, where possible. 4. Noise levels must be kept within acceptable limits. 5. Noisy operations should be combined so that they occur where possible at the same time. 6. Mine workers to wear necessary ear protection gear. 7. Noisy activities to take place during allocated hours. 8. Noise from labourers must be controlled. 9. Noise suppression measures must be applied to all equipment. Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from the site. 10. The Contractor must take measures to discourage labourers from loitering in the area and causing noise disturbance. Where possible labour shall be transported to and from the site by the Contractor or his Sub-Contractors by the Contractors own transport. 11. Implementation of enclosure and cladding of processing plants. 	Minimisation of impacts to acceptable limits
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				12. Applying regular and thorough maintenance schedules to equipment and processes. An increase in noise emission levels very often is a sign of the imminent mechanical failure of a machine.	
	Impact on potential cultural and heritage artefacts	Heritage	Operational Phase	<ol style="list-style-type: none"> 1. Any finds must be reported to the nearest National Monuments office to comply with the National Heritage Resources Act (Act No 25 of 1999) and to DEA. 2. Local museums as well as the South African Heritage Resource Agency (SAHRA) should be informed if any artefacts are uncovered in the affected area. 3. The Contractor must ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. 4. Any discovered artefacts shall not be removed under any circumstances. Any destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted. Permits shall be obtained from the SAHRA should the proposed site affect any world heritage sites or if any heritage sites are to be destroyed or altered. 	Minimisation of impacts to acceptable limits
Waste management		Pollution	Construction and Operational Phase	<p>Litter management</p> <ol style="list-style-type: none"> 1. Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction site. 2. The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at registered/licensed landfill. 3. Good housekeeping practices should be implemented to regularly maintain the litter and rubble situation on the construction site. 	Minimisation of impacts to acceptable limits

				<ol style="list-style-type: none"> 4. If possible and feasible, all waste generated on site must be separated into glass, plastic, paper, metal and wood and recycled. An independent contractor can be appointed to conduct this recycling. 5. Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor the neatness of the work sites as well as the Contractor campsite. 6. Skip waste containers should be maintained on site. These should be kept covered and arrangements made for them to be collected regularly. 7. All waste must be removed from the site and transported to a landfill site promptly to ensure that it does not attract vermin or produce odours. 8. Where a registered waste site is not available close to the construction site, the Contractor shall provide a method statement with regard to waste management. 9. A certificate of disposal shall be obtained by the Contractor and kept on file, if relevant. 10. Under no circumstances may solid waste be burnt on site. 11. All waste must be removed promptly to ensure that it does not attract vermin or produce odours. <p>Hazardous waste</p> <ol style="list-style-type: none"> 12. All waste hazardous materials must be carefully stored as advised by the ECO, and then disposed of offsite at a licensed landfill site, where practical. Incineration may be used where relevant. 13. Contaminants to be stored safely to avoid spillage. 14. Machinery must be properly maintained to keep oil leaks in check. 	
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				<p>15. All necessary precaution measures shall be taken to prevent soil or surface water pollution from hazardous materials used during construction and any spills shall immediately be cleaned up and all affected areas rehabilitated.</p> <p>Sanitation</p> <p>16. The Contractor shall install mobile chemical toilets on the site.</p> <p>17. Staff shall be sensitised to the fact that they should use these facilities at all times. No indiscriminate sanitary activities on site shall be allowed.</p> <p>18. Toilets shall be serviced regularly and the ECO shall inspect toilets regularly.</p> <p>19. Toilets should be no closer than 50m or above the 1:100 year flood line from any natural or manmade water bodies or drainage lines or alternatively located in a place approved of by the Engineer.</p> <p>20. Under no circumstances may open areas, neighbours fences or the surrounding bush be used as a toilet facility.</p> <p>21. The construction of “Long Drop” toilets is forbidden, but rather toilets connected to the sewage treatment plant.</p> <p>22. Potable water must be provided for all construction staff.</p> <p>Remedial actions</p> <p>23. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site.</p> <p>24. Excavation of contaminated soil must involve careful removal of soil using appropriate tools/machinery to storage containers until treated or disposed of at a licensed hazardous landfill site.</p>	
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				<p>25. The ECO must determine the precise method of treatment for polluted soil. This could involve the application of soil absorbent materials as well as oil-digestive powders to the contaminated soil.</p> <p>26. If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent material.</p> <p>27. If necessary, oil absorbent sheets or pads must be attached to leaky machinery or infrastructure.</p> <p>28. Materials used for the remediation of petrochemical spills must be used according to product specifications and guidance for use.</p> <p>29. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment, and stored in adequate containers until appropriate disposal.</p>	
Water Use and Quality	Water pollution	Water	Construction and Operational Phase	<p>Water Use</p> <p>1. Develop a sustainable water supply management plan to minimise the impact to natural systems by managing water use, avoiding depletion of aquifers and minimising impacts to water users.</p> <p>2. Water must be reused, recycled or treated where possible.</p> <p>Water Quality</p> <p>3. The quality and quantity of effluent streams discharged to the environment including stormwater should be managed and treated to meet applicable effluent discharge guidelines.</p> <p>4. Discharge to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria outside a scientifically established mixing zone.</p> <p>5. Efficient oil and grease traps or sumps should be installed and maintained at refueling facilities,</p>	

				<p>workshops, fuel storage depots, and containment areas and spill kits should be available with emergency response plans.</p> <p>Stormwater</p> <ol style="list-style-type: none"> 6. The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids and silt or chemical pollutants. 7. Silt fences should be used to prevent any soil entering the stormwater drains. 8. Temporary cut off drains and berms may be required to capture stormwater and promote infiltration. 9. Promote a water saving mind set with construction workers in order to Contractor ensure less water wastage. 10. Hazardous substances must be stored at least 20m from any water bodies on site to avoid pollution. 11. The installation of the stormwater system must take place as soon as possible to attenuate stormwater from the construction phase as well as the operation phase. 12. Earth, stone and rubble is to be properly disposed of, or utilized on site so as not to obstruct natural water path ways over the site. i.e. these materials must not be placed in stormwater channels, drainage lines or rivers. 13. There should be a periodic checking of the site's drainage system to ensure that the water flow is unobstructed. 14. If a batching plant is necessary, run-off should be managed effectively to avoid contamination of other areas of the site. Untreated runoff from the batch plant must not be allowed to get into the storm water system or nearby streams, rivers or erosion channels or dongas. 	
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				<p>Groundwater resource protection</p> <p>15. Process solution storage ponds and other impoundments designed to hold non fresh water or non-treated process effluents should be lined and be equipped with sufficient wells to enable monitoring of water levels and quality.</p> <p>Sanitation</p> <p>16. Adequate sanitary facilities and ablutions must be provided for construction workers (1 toilet per every 15 workers).</p> <p>17. The facilities must be regularly serviced to reduce the risk of surface or groundwater pollution.</p> <p>Concrete mixing</p> <p>18. Concrete contaminated water must not enter soil or any natural drainage system as this disturbs the natural acidity of the soil and affects plant growth.</p> <p>Public areas</p> <p>19. Food preparation areas should be provided with adequate washing facilities and food refuse should be stored in sealed refuse bins which should be removed from site on a regular basis.</p> <p>20. The Contractor should take steps to ensure that littering by construction workers does not occur and persons should be employed on site to collect litter from the site and immediate surroundings, including litter accumulating at fence lines.</p> <p>21. No washing or servicing of vehicles on site.</p>	
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f) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

<p>ACTIVITY Whether listed or not listed.</p> <p>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).</p>	<p>POTENTIAL IMPACT</p> <p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)</p>	<p>MITIGATION TYPE</p> <p>(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)</p> <p>E.g.</p> <ul style="list-style-type: none"> • Modify through alternative method. • Control through noise control • Control through management and monitoring <p>Remedy through rehabilitation..</p>	<p>TIME PERIOD FOR IMPLEMENTATION</p> <p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-..</p> <p>Upon cessation of the individual activity or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond mining as the case may be.</p>	<p>COMPLIANCE WITH STANDARDS</p> <p>(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>
<p>Clearance of vegetation</p>	<p>Loss or fragmentation of habitats</p>	<p>Existing vegetation</p> <p>30. Vegetation removal must be limited to the mining site.</p> <p>31. Vegetation to be removed as it becomes necessary rather than removal of all vegetation throughout the site in one step.</p> <p>32. No vegetation to be used for firewood.</p> <p>33. Exotic and invasive plant species should not be allowed to establish, if the development is approved.</p>	<p>Duration of operation</p>	<p>The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.</p>

		<p>Rehabilitation</p> <p>34. All damaged areas shall be rehabilitated upon completion of the contract.</p> <p>35. Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to construction.</p> <p>36. All natural areas impacted during construction must be rehabilitated with locally indigenous grasses typical of the representative botanical unit.</p> <p>37. Rehabilitation must take place in a phased approach as soon as possible.</p> <p>38. Rehabilitation process must make use of species indigenous to the area. Seeds from surrounding seed banks can be used for re-seeding.</p> <p>39. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.</p> <p>40. Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.</p> <p>Demarcation of mining area</p> <p>41. All plants not interfering with mining operations shall be left undisturbed clearly marked and indicated on the site plan.</p> <p>42. The mining area must be well demarcated and no construction activities must be allowed outside of this demarcated footprint.</p> <p>43. Vegetation removal must be phased in order to reduce impact of construction.</p> <p>44. Site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas.</p>		
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		<p>45. Strict and regular auditing of the mining process to ensure containment of the mining and laydown areas.</p> <p>46. Soils must be kept free of petrochemical solutions that may be kept on site during construction. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.</p> <p>Utilisation of resources</p> <p>47. Gathering of firewood, fruit, muti plants, or any other natural material onsite or in areas adjacent to the site is prohibited unless with prior approval of the ECO.</p> <p>Exotic vegetation</p> <p>48. Alien vegetation on the site will need to be controlled.</p> <p>49. The Contractor should be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.</p> <p>50. The spread of exotic species occurring throughout the site should be controlled.</p> <p>Herbicides</p> <p>51. Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used.</p> <p>52. The use of pesticides and herbicides on the site must be discouraged as these impact on</p>		
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		<p>important pollinator species of indigenous vegetation.</p> <p>Fauna</p> <p>53. Rehabilitation to be undertaken as soon as possible after mining has been completed.</p> <p>54. No trapping or snaring to fauna on the construction site should be allowed.</p> <p>55. No faunal species must be disturbed, trapped, hunted or killed by maintenance staff during any routine maintenance at the development.</p>		
Mining of Diamonds Alluvial and Diamonds general – excavations and blasting	Loss of topsoil	<ol style="list-style-type: none"> 1. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil, and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas. 2. Care must be taken not to mix topsoil and subsoil during stripping. 3. The topsoil must be conserved on site in and around the pit area. 4. Subsoil and overburden in the mining area should be stockpiled separately to be returned for backfilling in the correct soil horizon order. 5. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases. 6. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding. 	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<p>7. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof from an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager.</p> <p>Establish an effective record keeping system for each area where soil is disturbed for mining purposes. These records should be included in environmental performance reports, and should include all the records below.</p> <ul style="list-style-type: none"> • Record the GPS coordinates of each area. • Record the date of topsoil stripping. • Record the GPS coordinates of where the topsoil is stockpiled. • Record the date of cessation mining activities at the particular site. • Photograph the area on cessation of mining activities. • Record date and depth of re-spreading of topsoil. • Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time. 		
	Erosion	<ol style="list-style-type: none"> 1. An effective system of run-off control should be implemented, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion. 2. Periodical site inspection should be included in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records the 	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<p>occurrence of any erosion on site or downstream.</p> <ol style="list-style-type: none"> 3. Wind screening and stormwater control should be undertaken to prevent soil loss from the site. 4. The use of silt fences and sand bags must be implemented in areas that are susceptible to erosion. 5. Other erosion control measures that can be implemented are as follows: <ul style="list-style-type: none"> ○ Brush packing with cleared vegetation ○ Mulch or chip packing ○ Planting of vegetation ○ Hydroseeding/hand sowing 6. Sensitive areas need to be identified prior to construction so that the necessary precautions can be implemented. 7. All erosion control mechanisms need to be regularly maintained. 8. Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces. 9. Retention of vegetation where possible to avoid soil erosion. 10. Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time. 11. Re-vegetation of disturbed surfaces should occur immediately after construction activities are completed. This should be done through seeding with indigenous grasses. 12. No impediment to the natural water flow other than approved erosion control works is permitted. 13. To prevent stormwater damage, the increase in stormwater run-off resulting from construction activities must be estimated and the drainage system assessed accordingly. A 		
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		<p>drainage plan must be submitted to the Engineer for approval and must include the location and design criteria of any temporary stream crossings.</p> <p>14. Stockpiles not used in three (3) months after stripping must be seeded to prevent dust and erosion.</p>		
	Air Pollution	<p>Dust control</p> <p>14. Wheel washing and damping down of un-surfaced and un-vegetated areas.</p> <p>15. Retention of vegetation where possible will reduce dust travel.</p> <p>16. Clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas.</p> <p>17. Damping down of all exposed soil surfaces with a water bowser or sprinklers when necessary to reduce dust.</p> <p>18. The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the neighbouring communities.</p> <p>19. A speed limit of 30km/h must not be exceeded on site.</p> <p>20. Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor.</p> <p>21. Any dirt roads that are utilised by the workers must be regularly maintained to ensure that dust levels are controlled.</p> <p>Odour control</p> <p>22. Regular servicing of vehicles in order to limit gaseous emissions.</p> <p>23. Regular servicing of onsite toilets to avoid potential odours.</p>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<p>Rehabilitation 24. The Contractor should commence rehabilitation of exposed soil surfaces as soon as practical after completion of earthworks.</p> <p>Fire prevention 25. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires. 26. The Contractor shall have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.</p>		
	Noise	<ol style="list-style-type: none"> 1. The mining activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development. 2. Mine, crushers, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed in to the system. 3. Truck traffic should be routed away from noise sensitive areas, where possible. 4. Noise levels must be kept within acceptable limits. 5. Noisy operations should be combined so that they occur where possible at the same time. 6. Mine workers to wear necessary ear protection gear. 7. Noisy activities to take place during allocated hours. 	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<ol style="list-style-type: none"> 8. Noise from labourers must be controlled. 9. Noise suppression measures must be applied to all equipment. Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from the site. 10. The Contractor must take measures to discourage labourers from loitering in the area and causing noise disturbance. Where possible labour shall be transported to and from the site by the Contractor or his Sub-Contractors by the Contractors own transport. 11. Implementation of enclosure and cladding of processing plants. 12. Applying regular and thorough maintenance schedules to equipment and processes. An increase in noise emission levels very often is a sign of the imminent mechanical failure of a machine. 		
	<p>Impact on potential cultural and heritage artefacts</p>	<ol style="list-style-type: none"> 1. Any finds must be reported to the nearest National Monuments office to comply with the National Heritage Resources Act (Act No 25 of 1999) and to DEA. 2. Local museums as well as the South African Heritage Resource Agency (SAHRA) should be informed if any artefacts are uncovered in the affected area. 3. The Contractor must ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. 4. Any discovered artefacts shall not be removed under any circumstances. Any destruction of a 	<p>Duration of operation</p>	<p>The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.</p>

		<p>site can only be allowed once a permit is obtained and the site has been mapped and noted. Permits shall be obtained from the SAHRA should the proposed site affect any world heritage sites or if any heritage sites are to be destroyed or altered.</p>		
<p>Waste Management</p>		<p>Litter management</p> <ol style="list-style-type: none"> 1. Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction site. 2. The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at registered/licensed landfill. 3. Good housekeeping practices should be implemented to regularly maintain the litter and rubble situation on the construction site. 4. If possible and feasible, all waste generated on site must be separated into glass, plastic, paper, metal and wood and recycled. An independent contractor can be appointed to conduct this recycling. 5. Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor the neatness of the work sites as well as the Contractor campsite. 6. Skip waste containers should be maintained on site. These should be kept covered and arrangements made for them to be collected regularly. 7. All waste must be removed from the site and transported to a landfill site promptly to ensure that it does not attract vermin or produce odours. 8. Where a registered waste site is not available close to the construction site, the Contractor 	<p>Duration of operation</p>	<p>The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.</p>

		<p>shall provide a method statement with regard to waste management.</p> <ol style="list-style-type: none"> 9. A certificate of disposal shall be obtained by the Contractor and kept on file, if relevant. 10. Under no circumstances may solid waste be burnt on site. 11. All waste must be removed promptly to ensure that it does not attract vermin or produce odours. <p>Hazardous waste</p> <ol style="list-style-type: none"> 12. All waste hazardous materials must be carefully stored as advised by the ECO, and then disposed of offsite at a licensed landfill site, where practical. Incineration may be used where relevant. 13. Contaminants to be stored safely to avoid spillage. 14. Machinery must be properly maintained to keep oil leaks in check. 15. All necessary precaution measures shall be taken to prevent soil or surface water pollution from hazardous materials used during construction and any spills shall immediately be cleaned up and all affected areas rehabilitated. <p>Sanitation</p> <ol style="list-style-type: none"> 16. The Contractor shall install mobile chemical toilets on the site. 17. Staff shall be sensitised to the fact that they should use these facilities at all times. No indiscriminate sanitary activities on site shall be allowed. 18. Toilets shall be serviced regularly and the ECO shall inspect toilets regularly. 19. Toilets should be no closer than 50m or above the 1:100 year flood line from any natural or 		
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		<p>manmade water bodies or drainage lines or alternatively located in a place approved of by the Engineer.</p> <p>20. Under no circumstances may open areas, neighbours fences or the surrounding bush be used as a toilet facility.</p> <p>21. The construction of “Long Drop” toilets is forbidden, but rather toilets connected to the sewage treatment plant.</p> <p>22. Potable water must be provided for all construction staff.</p> <p>Remedial actions</p> <p>23. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site.</p> <p>24. Excavation of contaminated soil must involve careful removal of soil using appropriate tools/machinery to storage containers until treated or disposed of at a licensed hazardous landfill site.</p> <p>25. The ECO must determine the precise method of treatment for polluted soil. This could involve the application of soil absorbent materials as well as oil-digestive powders to the contaminated soil.</p> <p>26. If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent material.</p> <p>27. If necessary, oil absorbent sheets or pads must be attached to leaky machinery or infrastructure.</p> <p>28. Materials used for the remediation of petrochemical spills must be used according to product specifications and guidance for use.</p> <p>29. Contaminated remediation materials must be carefully removed from the area of the spill so</p>		
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		as to prevent further release of petrochemicals to the environment, and stored in adequate containers until appropriate disposal.		
Water Use and Quality	Water pollution	<p>Water Use</p> <ol style="list-style-type: none"> 1. Develop a sustainable water supply management plan to minimise the impact to natural systems by managing water use, avoiding depletion of aquifers and minimising impacts to water users. 2. Water must be reused, recycled or treated where possible. <p>Water Quality</p> <ol style="list-style-type: none"> 3. The quality and quantity of effluent streams discharged to the environment including stormwater should be managed and treated to meet applicable effluent discharge guidelines. 4. Discharge to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria outside a scientifically established mixing zone. 5. Efficient oil and grease traps or sumps should be installed and maintained at refueling facilities, workshops, fuel storage depots, and containment areas and spill kits should be available with emergency response plans. <p>Stormwater</p> <ol style="list-style-type: none"> 6. The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids and silt or chemical pollutants. 7. Silt fences should be used to prevent any soil entering the stormwater drains. 8. Temporary cut off drains and berms may be required to capture stormwater and promote infiltration. 		

		<p>9. Promote a water saving mind set with construction workers in order to Contractor ensure less water wastage.</p> <p>10. New stormwater construction must be developed strictly according to specifications from engineers in order to ensure efficiency.</p> <p>11. Hazardous substances must be stored at least 20m from any water bodies on site to avoid pollution.</p> <p>12. The installation of the stormwater system must take place as soon as possible to attenuate stormwater from the construction phase as well as the operation phase.</p> <p>13. Earth, stone and rubble is to be properly disposed of, or utilized on site so as not to obstruct natural water path ways over the site. i.e. these materials must not be placed in stormwater channels, drainage lines or rivers.</p> <p>14. There should be a periodic checking of the site's drainage system to ensure that the water flow is unobstructed.</p> <p>15. If a batching plant is necessary, run-off should be managed effectively to avoid contamination of other areas of the site. Untreated runoff from the batch plant must not be allowed to get into the storm water system or nearby streams, rivers or erosion channels or dongas.</p> <p>Groundwater resource protection</p> <p>16. Process solution storage ponds and other impoundments designed to hold non fresh water or un-treated process effluents should be lined and be equipped with sufficient wells to enable monitoring of water levels and quality.</p> <p>Sanitation</p>		
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		<p>17. Adequate sanitary facilities and ablutions must be provided for construction workers (1 toilet per every 15 workers).</p> <p>18. The facilities must be regularly serviced to reduce the risk of surface or groundwater pollution.</p> <p>Concrete mixing</p> <p>19. Concrete contaminated water must not enter soil or any natural drainage system as this disturbs the natural acidity of the soil and affects plant growth.</p> <p>Public areas</p> <p>20. Food preparation areas should be provided with adequate washing facilities and food refuse should be stored in sealed refuse bins which should be removed from site on a regular basis.</p> <p>21. The Contractor should take steps to ensure that littering by construction workers does not occur and persons should be employed on site to collect litter from the site and immediate surroundings, including litter accumulating at fence lines.</p> <p>22. No washing or servicing of vehicles on site.</p>		
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i) **Financial Provision**

(1) Determination of the amount of Financial Provision.

(a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

- Final landforms must be resilient to perturbation and also be self-sustaining to obviate/limit further/ongoing interventions and maintenance by Rietput Delwery CC
- The remaining impacts be of an acceptable nature with minimal deterioration over time.
- The final outcome of the mine site rehabilitation would be productive systems, where required sustaining either cattle or wildlife.
- Environmental and human quality of life, including health and safety requirements in general, would not be compromised; and
- Closure is achieved in an efficient and cost-effective manner as possible and with minimum socioeconomic changes.

The above goal is underpinned by more specific objectives listed below.

1. Upfront planning/development

To provide overall guidance and direction to closure planning and/or the implementation of progressive closure measures over the remaining over the operational life of the mine.

2. Physical stability

To ensure that surface infrastructure and mining residue and/or disturbances that are present at mine decommissioning will be removed and/or stabilised in a manner that these will not compromise post-closure land use and be sustainable long-term landforms.

- Closure, removal and disposal of all surface infrastructure that has no beneficial post-closure use.
- Shaping and vegetating the remaining earth embankments, trenches, etc. to stabilise slopes and integrate with surrounding topography.

3. Environmental quality

To ensure that local environmental quality is not adversely affected by possible physical effects arising from mine operations and the mine site after closure. This will be achieved by:

- Avoiding and/or limiting the following during mining operations which could result in adverse effects that could not be readily addressed and/or mitigated at mine closure.
 - Dust fall-out areas surrounding the mine site.
 - Wash-off and/or mobilisation of chemically contaminated soils and sediments from the mine site that could have long term adverse effects on local aquatic health and/or other water uses.
 - Possible shallow groundwater contamination adversely affecting the quality of the local water resource and its beneficial use.
- Limiting the potential for dust generation on the rehabilitated mine site that could cause nuisance and/or health effects to surrounding landowners;
- Limiting the possible adverse water quality and quantity effects arising from the rehabilitated mine site to ensure that long term beneficial use of local resources is not compromised;
- Conducting soil clean-up/remediation to ensure that the planned land use could be implemented and maintained;

4. Health and safety

To limit the possible health and safety treats due to terrain hazards to humans and animals utilizing the rehabilitated mine site after mine closure by:

- Demonstrating through upfront soil testing that any resultant inorganic and organic pollution present on the site is acceptable;
- Removal of potential contaminants such as hydrocarbons and chemicals off site;
- Shaping of embankments and trenches to safe slopes and reintegrating of these into surrounding topography.
- Ensuring that the environmental quality as reflected above is achieved.

5. Land capability / land use

To ensure that the required land capability to achieve and support the planned land use can be achieved over the mine site by:

- Clean-up and reclamation of contaminated soil areas in order not to compromise the above land use planning earmarked for implementation;
- To ensure that the overall rehabilitated mine site is free draining
- Transferring mining related surface infrastructure to third parties for beneficial use after mine closure.

6. Aesthetic quality

To ensure that the rehabilitated mine site will display, at a minimum, an acceptable aesthetic appearance that would not compromise the planned land use by leaving behind:

- A mining area that is properly cleared-up with no fugitive/scattered waste piles
- Rehabilitated mining area that is free draining and disturbed areas that are suitably vegetated.
- Rehabilitated mining residues that are suitably landscaped, blending with the surrounding environment as far as possible.
- Shaped and rehabilitated terrace and hard stand areas, roughly emulating the local natural surface topography.

7. Landscape viability

To create a landscape that is self-sustaining and over time will evolve/converge to the desired ecosystem structure, function and composition by:

- Conducting surface profiling, with associated material movement optimisation, to obtain a landscape resembling the natural landscapes to support the succession trajectory towards a climax ecological system.
- Establishing woody patches and create “rough and loose” areas for pioneer specie establishment around the respective patches.
- Establishing pioneer species as follows:
 - Collected and prepared seeds for broad casting;
 - Seedlings grown on on-site nursery;
 - Cuttings collected from surrounding veld areas;
 - Conducting rehabilitation monitoring and corrective action as required.

8. Biodiversity

To encourage, where appropriate, the re-establishment of native vegetation on the rehabilitated mine site such the terrestrial biodiversity is largely re-instated over time, by:

- Stabilising disturbed areas to prevent erosion in the short- to medium term until a suitable vegetation cover has established; and
- Establishing viable self-sustaining vegetation communities of local fauna, as far as possible.

(b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.

Closure objectives within the EMP have been presented to the public as part of the public participation process and on-going closure planning for mining.

(c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.

The Rehabilitation Plan is attached as **Appendix 8**.

(d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The rehabilitation plan relates to each closure objective identified for the mine. Therefore, the rehabilitation plan is considered to be compatible with the closure objectives.

(e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.

CALCULATION OF THE QUANTUM

Applicant: **Rietput Delwery CC**
 Evaluator:

Ref No.: **NC30/5/1/3/2/10529MP**
 Date: **19-Jul-16**

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	50	12,84	1	1	642
2 (A)	Demolition of steel buildings and structures	m2	0	178,87	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	263,59	1	1	0
3	Rehabilitation of access roads	m2	100	32	1	1	3200
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	310,66	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	169,45	1	1	0
5	Demolition of housing and/or administration facilities	m2	25	357,73	1	1	8943,25
6	Opencast rehabilitation including final voids and ramps	ha	1	182 063,65	0,52	1	94673,098
7	Sealing of shafts adits and inclines	m3	0	96,02	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	125 016,15	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	155 705,36	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	452 242,17	1	1	0
9	Rehabilitation of subsided areas	ha	0	104 682,20	1	1	0
10	General surface rehabilitation	ha	0,1	99 033,88	1	1	9903,388
11	River diversions	ha	0	99 033,88	1	1	0
12	Fencing	m	20	112,97	1	1	2259,4
13	Water management	ha	0	37 655,47	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0,1	13 179,41	1	1	1317,941
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							120939,077

1	Preliminary and General	14512,68924	weighting factor 2	14512,68924
			1	
2	Contingencies	12093,9077		12093,9077
Subtotal 2				147545,67
VAT (14%)				20656,39
Grand Total				168202

Rehabilitation will be taking place continuously and therefore only a small area (1 ha) will be left unrehabilitated at the end of mining activities, which will require the amount provided in the quantum.

(f) Confirm that the financial provision will be provided as determined.

Financial Guarantee

The financial guarantee for the rehabilitation for land disturbed by Rietput Delwery CC was submitted together with the application for the mining permit.

Rehabilitation Fund

Rietput Delwery CC will also make provision for rehabilitation during closure by establishing a rehabilitation trust.

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

- g) **Monitoring of Impact Management Actions**
- h) **Monitoring and reporting frequency**
- i) **Responsible persons**
- j) **Time period for implementing impact management actions**
- k) **Mechanism for monitoring compliance**

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Clearance of vegetation	Loss or fragmentation of habitats	<ul style="list-style-type: none"> • Conduct regular internal audits • Conduct regular external audits 	<ul style="list-style-type: none"> • Environmental Manager • Suitable qualified environmental auditor 	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.
Mining of Diamonds Alluvial and Diamonds general – excavations	Loss of topsoil Erosion Air Pollution Noise Impact on potential cultural and heritage artefacts	<ul style="list-style-type: none"> • Conduct regular internal audits • Conduct regular external audits 	<ul style="list-style-type: none"> • Environmental Manager • Suitable qualified environmental auditor 	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.
Waste management	Pollution	<ul style="list-style-type: none"> • Conduct regular internal audits • Conduct regular external audits 	<ul style="list-style-type: none"> • Environmental Manager • Suitable qualified environmental auditor 	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits

				should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.
Water Use and Quality	Water pollution	<ul style="list-style-type: none"> • Conduct regular internal audits • Conduct regular external audits 	<ul style="list-style-type: none"> • Environmental Manager • Suitable qualified environmental auditor 	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.

l) Indicate the frequency of the submission of the performance assessment/ environmental audit report.

External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the Competent Authority if required.

m) Environmental Awareness Plan

(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

Rietput Delwery CC will implement an Environmental Awareness Plan which will include various mechanisms for informing employees of environmental risks resulting from their work, including:

- Induction training for full –time staff and contractors;
- In-house training sessions to be held with relevant employees;
- On the job training regarding environmental issues
- Training and skills development

The above measures will be implemented through an Environmental Communication Strategy to be implemented.

(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

Rietput Delwery CC will implement an incident reporting and reporting procedure in order to identify risks timeously and implement actions to avoid or minimise environmental impacts.

**n) Specific information required by the Competent Authority
(Among others, confirm that the financial provision will be reviewed annually).**

No specific information requirements have been detailed by the Competent Authority.

2) UNDERTAKING

The EAP herewith confirms

- f) the correctness of the information provided in the reports
- g) the inclusion of comments and inputs from stakeholders and I&APs ;
- h) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- i) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. parties are correctly reflected herein.



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Echale.

Signature of the environmental assessment practitioner:

Milnex 189 CC – Environmental Consultants

Name of company:

19/07/2016

Date:

-END-