



mineral resources

Department:

Mineral Resources

REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL IMPACT ASSESSMENT REPORT and ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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: KIMSWA MINING (PTY) LTD
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FILE REFERENCE NUMBER SAMRAD: (NC) 30/5/1/2/2/ 10144MR

1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act, 2002 (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, 1998 (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 therefore 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 ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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

- (a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
- (b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- (c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
- (d) determine the—
 - (i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and
 - (ii) degree to which these impacts—
 - (aa) can be reserved;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be avoided, managed or mitigated.
- (e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
- (f) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
- (g) identify suitable measures to manage, avoid or mitigate identified impacts; and
- (h) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

3. Contact Person and Correspondence Address

a) Details of

i) Details of the EAP

Name of the Practitioner:	ROELINA OOSTHUIZEN
Tel No.:	053 8320029
Cell No.:	084 208 9088
Fax No.:	086 510 7120
E-mail address:	roosthuizen950@gmail.com

ii) Expertise of the EAP

(1) The qualifications of the EAP

Masters in Environmental Management (UFS)
 B-Comm in Human and Industrial- Psychology (NWU)
 (With evidence attached as **Appendix 1**)

(2) Summary of the EAP's past experience

(In carrying out the Environmental Impact Assessment Procedure)

Relevant past experiences in carrying out the Environmental Impact Assessment Procedures include Environmental Impact Assessments, Environmental Management Plans/Programmes/ Reports, Performance assessments, Rehabilitation progress assessments, Environmental Liability assessments, Environmental compliance monitoring, Scoping Reports, etc.

Please refer to attached CV.

(with evidence attached as **Appendix 2**)

b) Description of the property

Farm Name:	A Portion of Remainder Pniel 281 and a Portion of the Vaal River (112.1703 ha) located in the Barkly-Wes district
Application area (Ha)	112.1703 ha (One hundred and twelve comma one seven zero three hectares.)
Magisterial district:	Barkly-Wes
Distance and direction from nearest town	12km from Barkly-Wes on the R31 towards Postmasburg. North of Barkly-West next to farm 350 (Gong-Gong), Northern Cape, South Africa.
21 digit Surveyor General Code for each farm portion	C0070000000028100000 (A Portion of the Remainder of Pniel 281) UNSURVEYED STATE LAND Total Extent of application area: 112,1703ha

c) **Locality map**

(show nearest town, scale not smaller than 1:250000)

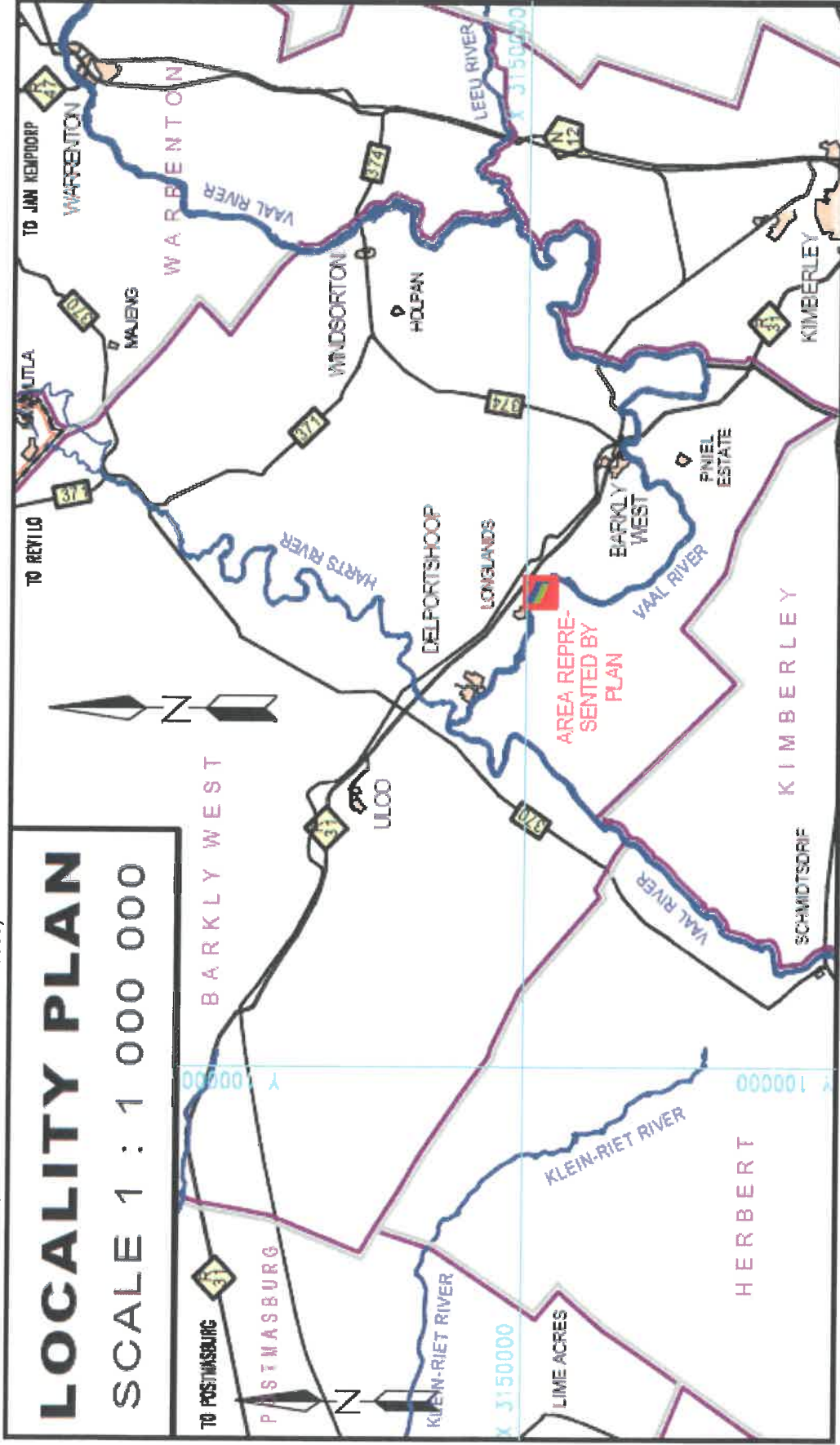


Figure 1. Locality Plan indicating the application area with a RED BLOCK.

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)

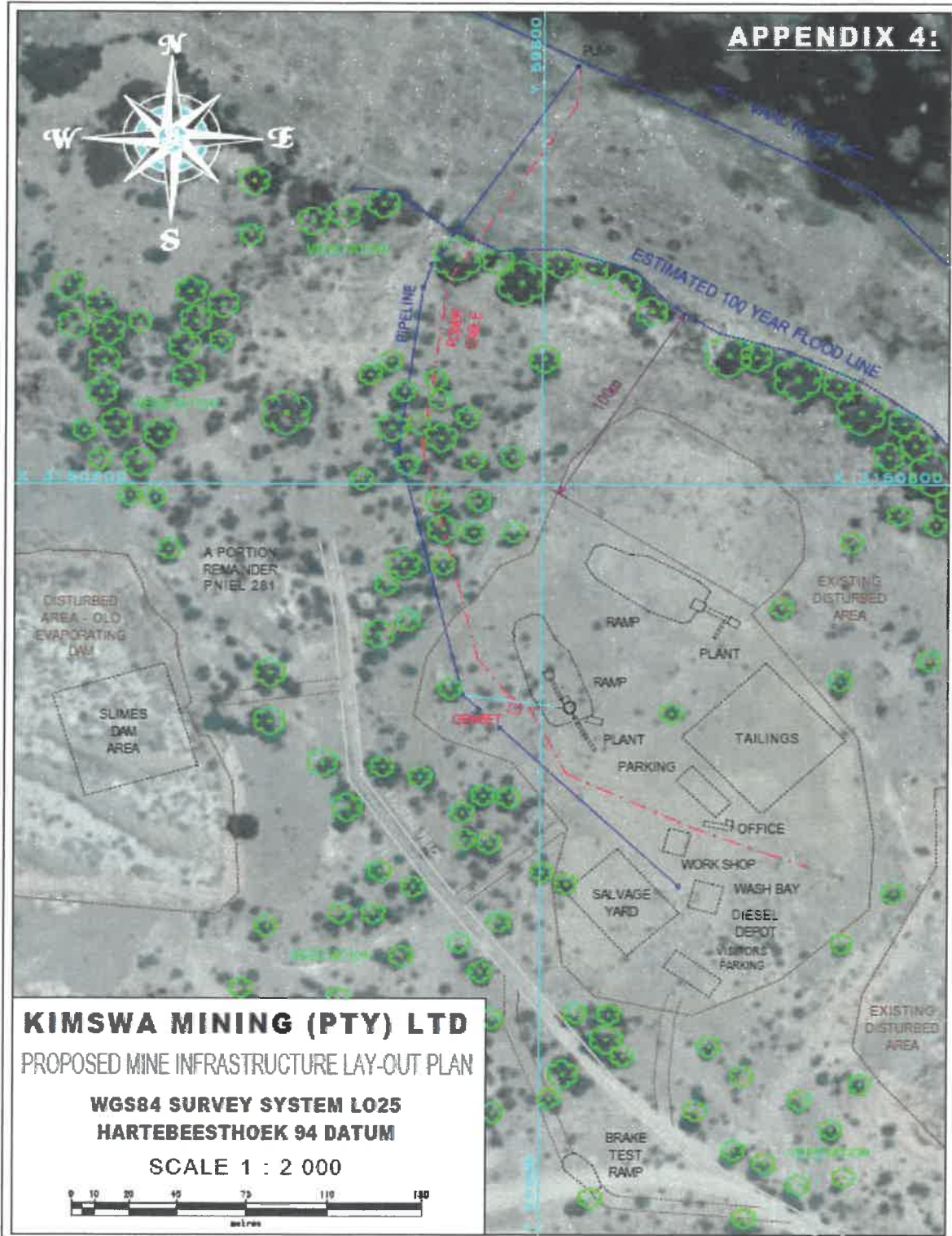


Figure 2. A map of the area indicating the overall location and extent of PROPOSED listed activities and main infrastructure on the mining site.

i) Listed and specified activities

Table 1: Listed and Specified Activities

NAME OF ACTIVITY (E.g. for prospecting – drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route, etc. ... etc. ... etc. E.g. for mining – excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc. ... etc. ... etc.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE NOTICE (GNR 544, GNR 545 or GNR 546)	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
Activity 17 of NEMA Listing Notice 2 "Any activity including the operation of that activity which requires a mining right [section 22 of MPRDA], including infrastructure, structures and earthworks, directly related to the extraction of a mineral resource ..."	112,1703 ha	X	GNR 984	
Activity 12 of NEMA Listing notice 1 "The development of— (i) canals exceeding 100 square metres in size; (ii) channels exceeding 100 square metres in size; (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size; (x) buildings exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical	5000m ²	X	GNR 983	

<p>footprint of 100 square metres or more; where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse”</p> <p>Regulation GN R704, published on 4 June 1999 in terms of the National Water Act (Use of water for mining and related activities)</p> <p>GNR984: Activity 17</p> <p>Consideration of GN704 – Water Act</p>				
<p>Activity 21 of NEMA Listing Notice 2</p> <p>Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</p>	<p>0.5 ha will be used for the processing and plant associated infrastructure.</p>	<p>X</p>	<p>GNR 984</p>	
<p>Activity 24(ii) of NEMA Listing Notice 1</p> <p>The development of haul roads 15m wide with no reserve</p>	<p>±5 000m² on the Area.</p>	<p>X</p>	<p>GNR983</p>	
<p>Activity 56(ii) of NEMA Listing Notice 1</p> <p>The continuous lengthening (and rehabilitation) of haul roads 15m wide with no reserve</p>	<p>±5 000m² on the Area.</p>	<p>X</p>	<p>GNR983</p>	

<p>Activity 19 of NEMA Listing Notice 1</p>	<p>The infilling or depositing of any material more than 5 cubic metres into, or dredging, excavation, removal or movind of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from-</p> <p>(i) a watercourse</p>	<p>X</p>	<p>GNR983</p>	
<p>Activity 15 of NEMA Listing Notice 2</p> <p>"The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-</p> <p>(i) The undertaking of a linear activity; or</p> <p>(ii) Maintenance purposes undertaken in accordance with a maintenance management plan."</p>	<p>A total of ±50 hectares will be physically disturbed were the alluvial diamond material will be removed and washed.</p>	<p>X</p>	<p>GNR984</p>	
<p>Activity 10 of NEMA Listing Notice 3: "The development of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic meters."</p>	<p>250m²</p>	<p>X</p>	<p>GNR985</p>	
<p>Activity 9 of Category A under the National Environmental Management: Waste Act 59 of 2008</p>	<p>The disposal of inert waste of 10 000 tons, excluding the disposal of such</p>		<p>GNR 633</p>	<p>X</p>

	waste for the purposes of levelling and building which has been authorised by other legislation.			
Activity 15 of Category A under the National Environmental Management: Waste Act 59 of 2008 The continuous establishment and reclamation of temporary stockpiles resulting from activities which require a mining right.	20 000m ²		GNR 633	X
OTHER ACTIVITIES (Associated infrastructure not considered to be listed activities)				
Temporary Workshop Facilities Storage Facilities	±300m ²			
Concrete Bund walls and diesel Depots Ablution Facilities	±3000m ²		NOT LISTED	
Topsoil Stockpiles	±250m ²			
Overburden Stockpiles	±25m ²			

ii) Description of the activities to be undertaken

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

The following is a description of a typical South African alluvial diamond mining operation, which is also being utilized at Kimswa. The mining method being employed is a strip mining process with oversize material from the gravel scalping and the tailings from the plant, being used as backfill material prior to final rehabilitation. Gravels are excavated, loaded and transported to the nearby treatment facility using articulated dump trucks. Gravels are then loaded onto a vibrating grizzly and the +32 mm oversize material is discarded back into the open pit (about 55% reduction). The remaining -32 mm fraction is loaded into a series of 2 X 16 sixteen foot rotary pans, each with a treatment capacity of 40 tph. Tracer tests are done regularly to ensure that the pans are operating at the correct density. Concentrate is tapped continuously from each of the pans every three hours into three ton holding bins and transported with trucks to totally enclosed final recovery unit which is situated on Holpan near Windsorton, which is designed to use both X-ray and grease diamond recovery methods or any other facility which is chosen by Kimswa Mining.

The operational phase of the mining operation will include the mining of alluvial diamonds by means of open cast mining with machinery in approximately 100 m x 100 m blocks.

Topsoil will be removed from the first block, where after it will be stored separately on the high ground of the proposed mining area. Stored topsoil will be kept separate from overburden and will not be used for the building or maintenance of access roads. Stored topsoil will be adequately protected from being eroded or blown away.

Exposed diamondiferous gravel of Block 1 will then be removed by means of a back actor and loaded onto a tipper truck, which will transport it to the central mineral processing plant. At the plant the diamondiferous gravel will be sorted by means of a grizzly screen grid and all material larger than 100 mm will be separated from the rest. This material will be used in the backfilling stage.

Screened material smaller than 100 mm will be transported to a stockpiling area via front-end loader. From here it will be transported to a conveyor belt, which will feed it onto a wet rotary screen and then directly onto at approximately 2 X 16 feet washing pans.

The following procedure will be followed in terms of backfilling and rehabilitation:

The coarse gravel sifted at the grizzly screen, tailing from the pans and fine concentrate will be transported back to and dumped into open Block 1. During this process of backfilling, variation in the dumping sequence of different sized materials will be followed to ensure better compaction and stability of the reclaimed gravel.

This will ensure that the voids surrounding the coarse gravel will be filled up with finer sediments. Compaction will be achieved through the movement of heavy vehicles over the area during the backfilling stage.

The river portion will only be backfilled with coarse material to limit the creation of sediments in the river.

The mining sequence will be followed until the last block is reached. Topsoil stored at the beginning of the mining operation will now be utilized for the final rehabilitation of the last block on the land portion.

Workshop equipment and tools to be used consist of secured container stores containing grease pumps, rigger chains, hydraulic jacks, air compressors, electric testers, welders, grinders, socket sets, gas sets, magnetic drills, hydraulic test instruments, tools, spanners and tool boxes. Mining activities will cover an area of approximately 40% of the area. Approximately 15 000 litres of process water will be required by the proposed mining operation per hour per pan however modern technology in de-sanding may reduce water consumption in some areas.

Process water is sourced from the Vaal River. Other sources include pumping water from the slimes disposal facility and rain water that collects within the mining excavations/blocks. The production rate of the proposed operation will be approximately 40 tph per pan.

ii. Infrastructure

No infrastructure except farm roads will be affected by mining activities.

The following equipment will be temporarily installed as part of the mining activities whereby it will be removed during the decommissioning phase.

- 1 x front-end loader
- 1 x Excavator
- 2 x 40ton ADT's
- Transport Bakkie
- Recovery Unit, c/w storage/transfer bins, sizing screen, conveyers, classifier
- Water pump with pipeline
- 3 x 6 meters containers (offices, tea room, ablutions)
- 2 x 16 feet washing pan with conveyers

All temporary infrastructures, equipment and other items used during the proposed mining period will be removed from the site.

No ESKOM power is available on the site. All mining will be done with gensets.

iii. Rehabilitation

The mining method involves a continuous backfilling open cast mining process. Topsoil will be stripped and hauled to already backfilled areas. If there are no backfilled areas available immediately, topsoil will be temporarily stockpiled on the surface for later use. No materials will be permanently dumped on the surface. Washed and screened material will be backfilled into the already mined out areas and will be covered with the overburden and topsoil that has been allocated for this purpose. The river portion will only be backfilled with coarse material to limit the sediments in the river.

On completion of the mining operation, the various surfaces, including the access road, the office area, storage areas and the plant site, will finally be rehabilitated as follows: All material on the surface will be removed to the original topsoil level where possible. This material will then be backfilled into the open pits. Any compacted area will then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped. All infrastructures, equipment, plant, and other items used during the operational period will be removed from the site.

Water

Surface Water

The application area is within the Vaal River. Water will be abstracted from the Vaal River for the purpose of the mining operation. No waste material resulting from the proposed mining operation will be dumped or pumped into any source of surface water. No source of surface water will therefore intentionally in any way be affected by the proposed mining operation. All processing of the gravels will be done outside the 1:100 year floodline with permission from the Surface owners.

Implementation of a suitable management action plan during the operation of the proposed diamond mine, based on analysis of bi-annual water quality and biological monitoring data collected at sites upstream and downstream of all activities;

Prevention of exotic vegetation encroachment;

Prevent further siltation within the river segment as well as downstream of activities;

Unnecessary destruction of marginal and instream habitat should always be avoided during operations.

Ground Water

There are no boreholes that are known within the application area.

Waste Management

Proper sanitation facilities will be provided for employees. No person will pollute the workings with faeces or urine, misuse the facilities provided or inappropriately foul the surrounding environment with faeces or urine. Acceptable hygienic and aesthetic practices will be adhered to. Non-biodegradable refuse such as glass bottles, plastic bags, etc. will be sorted and stored in separate lockable containers at a central point. It will be disposed of at a recognised disposal facility twice a month. Biodegradable refuse will either be handled as indicated, or be buried in a pit excavated for that

purpose and covered with layers of soil when almost full. A final 0,5m thick layer of topsoil will be incorporated where practicable. Provision will be made for the future subsidence of the covering. Refuse will not be dumped in the vicinity of the mining area. Waste material with regard to vehicle repairs will be kept in 200 litres steel containers in the maintenance/farmstead area. This material will be disposed of at a recognised disposal facility once a month.

Access Roads

The property is accessed via the R31 tar road and the Gong-Gong gravel road, as well as tracks on the property. Activities associated with the Kimsa Mine that is expected to make use of these roads include:-

- o The transportation of mining personnel to and from the site;
- o Delivery of supplies and materials;
- o The transportation of the product for the market.

These transport operations will make use of passenger vehicles, light delivery vehicles and very limited heavy vehicles.

Haul Roads

There will be one Haul road to the plant area and one haul road to the mining site. No other haul roads will be constructed. Main haul roads will have a minimum width of 6m. No roads will be wider than 6m. Existing roads will be used as far as practically possible.

e) Policy and Legislative Context

Applicable Legislation and Guidelines used to compile the report <small>(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.)</small>	Reference where applied	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT (E.g In terms of the National Water Act:-Water Use License has/has not been applied for).
Conservation of Agricultural Resources Act (Act 43 of 1983) and Regulations (CARA)	<ul style="list-style-type: none"> - Section 5: Implementation of control measures for alien and invasive plant species; - Section 6: Control measures. - Regulation GN R1048, published on 25 May 1984, in terms of CARA 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
Constitution of South Africa (Act 108 of 1996)	<ul style="list-style-type: none"> - Section 24: Environmental right - Section 25: Rights in Property - Section 27: Water and sanitation right 	<ul style="list-style-type: none"> - To be implemented upon the approval of the EMPR.
Environment Conservation Act (Act 73 of 1989) and Regulations (ECA)	<ul style="list-style-type: none"> - Sections 21, 22, 25, 26 and 28: EIA Regulations, including listed activities that still relate to the existing section of ECA. - Section 28A: Exemptions. 	<ul style="list-style-type: none"> - To be implemented upon the approval of the EMPR.
Fencing Act (Act 31 of 1963)	<ul style="list-style-type: none"> - Section 17: States that any person erecting a boundary fence may clean any bush along the line of the fence up to 1.5m on each side thereof and remove any tree standing in the immediate line of the fence. However, this provision must be read in conjunction with the environmental legal provisions relevant to protection of flora. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
Hazardous Substances Act (Act 15 of 1973) and Regulations read together with NEMA and NEMWA	<ul style="list-style-type: none"> - Definition, classification, use, operation, modification, disposal or dumping of hazardous substances. 	<ul style="list-style-type: none"> - Noted and Considered measures are to be implemented upon the approval of the EMPR.
Intergovernmental Relations Act (Act 13 of 2005)	<ul style="list-style-type: none"> - This Act establishes a framework for the National, Provincial and Local Governments to promote and 	

<p>Mine, Health and Safety Act (Act 29 of 1996) and Regulations</p>	<p>facilitate intergovernmental relations.</p> <ul style="list-style-type: none"> - Entire Act. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
<p>Mineral and Petroleum Resources Development Act (Act 28 of 2002) and Regulations as amended</p>	<ul style="list-style-type: none"> - Entire Act. - Regulations GN R527 	<ul style="list-style-type: none"> - A Mining Right has been applied for (NC) 30/5/1/2/10144 MR. - Rights and obligations to be adhered to.
<p>National Environmental Management Act (Act 107 of 1998) and Regulations as amended</p>	<ul style="list-style-type: none"> - Section 2: Strategic environmental management principles, goals and objectives. - Section 24: Foundation for Environmental Management frameworks. - Section 24N: - Section 24O: - Section 28: The developer has a general duty to care for the environment and to institute such measures to demonstrate such care. - Regulations GN R547, more specifically Chapters 5 and 7, where applicable (the remainder was repealed) published on 18 June 2010 in terms of NEMA (Environmental Management Framework Regulations) - Regulations GN R982 to R985, published on 4 December 2014 in terms of NEMA (Listed Activities) - Regulations GN R993, published on 8 December 2014 in terms of NEMA (Appeal) - Regulations GN R994, published on 8 December 2014 in terms of NEMA (exemption) - Regulations GN R205, published on 12 March 2015 in terms of NEMA (National appeal Amendment Regulations) - Regulations GN R1147, published on 20 November 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.

<p>National Environmental Management: Air Quality Act (Act 39 of 2004)</p>	<p>2015 in terms of NEMA (Financial Provision)</p> <ul style="list-style-type: none"> - Section 32: Control of dust - Section 34: Control of noise - Section 35: Control of offensive odours - Regulation GN R551, published on 12 June 2015 (amended Categories 1 to 5 of GN 983) in terms of NEM:AQA (Atmospheric emission which have a significant detrimental effect on the environment) - Regulation GN R283, published on 2 April 2015 in terms of NEM:AQA (National Atmospheric Emissions Reporting Regulations) (Group C-Mines) 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR. - This is also legislated by Mine Health and Safety from DMR and is to be adhered to.
<p>National Environmental Management: Biodiversity Act (Act 10 of 2004)</p>	<ul style="list-style-type: none"> - Section 52 of The National Environmental Management Act: Biodiversity Act (NEMBA) (Act 10 of 2004) states that the MEC/Minister is to list ecosystems that are threatened and in need of protection. - Section 53 states that the Minister may identify any process or activity in such a listed ecosystem as a threatening process. - A list of threatened and protected species has been published in terms of Section 56(1) GG 29657 GNR 151 and GNR 152, Threatened or Protected Species Regulations. - Commencement of Threatened or Protected Species Regulations 2007 : 1 June 2007 GNR 150/GG 29657/23-02-2007 <p>Publication of lists of critically endangered, vulnerable and protected species GNR 151/GG</p>	<ul style="list-style-type: none"> - A permit application regarding protected plant species need to be lodged with DENC if any protected species is encountered.

<p>The National Environmental Management Act: Protected Areas Act (NEMPAA) (Act 57 of 2003) provides for the protection of ecologically viable areas that are representative of South Africa's natural biodiversity and its landscapes and seascapes.</p> <p>National Environmental Management: Waste Management Act (Act 59 of 2008)</p>	<p>29657/23-02-2007 *</p> <p>Threatened or Protected Species Regulations GNR 152/GG 296547/23-02-2007 *</p> <ul style="list-style-type: none"> - Sections 65 – 69: These sections deal with restricted activities involving alien species; restricted activities involving certain alien species totally prohibited; and duty of care relating to alien species. - Sections 71 and 73: These sections deal with restricted activities involving listed invasive species and duty of care relating to listed invasive species. - Regulation GN R151, published on 23 February 2007 (List fo Critically Endangered, Vulnerable and Protected Species, 2007) in terms of NEM: BA - Regulation GN R152, published on 23 February 2007 (TOPS) in terms of NEM:BA - Regulations GN R507 to 509 of 2013 and GN 599 of 2014 in terms of NEM:BA (Alien Species) - Chapter 2 lists all protected areas. 	<ul style="list-style-type: none"> - Not applicable. The mining operation does not fall within any protected area.
	<ul style="list-style-type: none"> - Chapter 4: Waste management activities Regulations GN R634 published on 23 August 2013 in terms of NEM:WA (Waste Classification and Management Regulations) - Regulations GN R921 published on 29 November 	<ul style="list-style-type: none"> - To be implemented upon the approval of the EMPR.

	<p>2013 in terms of NEM:WA (Categories A to C – Listed activities)</p> <ul style="list-style-type: none"> - National Norms and Standards for the Remediation of contaminated Land and Soil Quality published on 2 May 2014 in terms of NEM:WA (Contaminated land regulations) - Regulations GN R634 published on 23 August 2013 in terms of NEM: WA (Waste Classification and Management Regulations) - Regulations GN R632 published on 24 July 2015 in terms of NEM: WA (Planning and Management of Mineral Residue Deposits and Mineral Residue Stockpiles) - Regulations GN R633 published on 24 July 2015 in terms of NEM: WA (Amendments to the waste management activities list published under GN921) 	
National Forest Act (Act 84 of 1998) and Regulations	<ul style="list-style-type: none"> - Section 15: No person may cut, disturb, damage, destroy or remove any protected tree; or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister. 	<ul style="list-style-type: none"> - A permit application regarding protected tree species need to be lodged with DAFF if necessary. - Control measures are to be implemented upon the approval of the EMPR.
National Heritage Resources Act (Act 25 of 1999) and Regulations	<ul style="list-style-type: none"> - Section 34: No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority. - Section 35: No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site. - Section 36: No person may, without a permit 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR. Fossil finds procedure is attached to the PIA.

<p>National Water Act (Act 36 of 1998) and regulations as amended, <i>inter alia</i> Government Notice No. 704 of 1999</p>	<p>issued by SAHRA or a provincial heritage resources authority destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a forma cemetery administered by a local authority.</p> <p>Section 38: This section provides for HIA which are not already covered under the ECA. Where they are covered under the ECA the provincial heritage resources authorities must be notified of a proposed project and must be consulted during HIA process.</p> <p>Regulation GN R548 published on 2 June 2000 in terms of NHRA</p>	
	<ul style="list-style-type: none"> - Section 4: Use of water and licensing. - Section 19: Prevention and remedying the effects of pollution. - Section 20: Control of emergency incidents. - Section 21: Water uses <p>In terms of Section 21 a licence is required for:</p> <ul style="list-style-type: none"> (a) taking water from a water resource; (b) storing water; (c) impeding or diverting the flow of water in a watercourse; (f) Waste discharge related water use; (g) disposing of waste in a manner which may detrimentally impact on a water resource; (i) altering the bed, banks, course or characteristics of a watercourse; (j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and; 	<ul style="list-style-type: none"> - A water use application is in the final stages of preparation and will be lodged with Department of Water and Sanitation (DWS) when the EIA EMP has been finalized. - Control measures are to be implemented upon the approval of the EMPR.

	<ul style="list-style-type: none"> - Regulation GN R704, published on 4 June 1999 in terms of the National Water Act (Use of water for mining and related activities) - Regulation GN R1352, published on 12 November 1999 in terms of the National Water Act (Water use to be registered) - Regulation GN R139, published on 24 February 2012 in terms of the National Water Act (Safety of Dams) - Regulation GN R398, published on 26 March 2004 in terms of the National Water Act (Section 21 (f)) - Regulation GN R399, published on 26 March 2004 in terms of the National Water Act (Section 21 (a) and (b)) - Regulation GN R1198, published on 18 December 2009 in terms of the National Water Act (Section 21 (c) and (i) – rehabilitation of wetlands) - Regulations GN R1199, published on 18 December 2009 in terms of the National Water Act (Section 21 (c) and (i)) - Regulations GN R665, published on 6 September 2013 in terms of the National Water Act (Amended GN 398 and 399 – Section 21 (e), (f), (h), (g), (j)) 	
Nature Conservation Ordinance (Ord 19 of 1974)	<ul style="list-style-type: none"> - Chapters 2, 3, 4 and 6: Nature reserves, miscellaneous conservation measures, protection of wild animals other than fish, protection of Flora. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
Northern Cape Nature Conservation Act (Act 9 of 2009)	<ul style="list-style-type: none"> - Addresses protected species in the Northern Cape and the permit application process related thereto. 	<ul style="list-style-type: none"> - A permit application regarding provincially protected plant species as well as for large-scale harvesting of indigenous flora need to be lodged with DENC if necessary. - Control measures are to be

Occupational Health and Safety Act (Act 85 of 1993) and Regulations	<ul style="list-style-type: none"> - Section 8: General duties of employers to their employees. - Section 9: General duties of employers and self-employed persons to persons other than their employees. 	implemented upon the approval of the EMPR.
Road Traffic Act (Act 93 of 1997) and Regulations	<ul style="list-style-type: none"> - Entire Act. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
Water Services Amendment Act (Act 30 of 2007)	<ul style="list-style-type: none"> - It serves to provide the right to basic water and sanitation to the citizens of South Africa (giving effect to section 27 of the Constitution). 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
National Land Transport Act, (Act 5 of 1998)		<ul style="list-style-type: none"> - To take note.
Northern Cape Planning and Development Act (Act 7 of 1998)	<ul style="list-style-type: none"> - To control planning and development 	<ul style="list-style-type: none"> - To be implemented upon the approval of the EMPR.
Spatial Planning and Land Use Management (Act 16 of 2013 (SPLUMA) and regulations	<ul style="list-style-type: none"> - To provide a framework for spatial planning and land use management in the Republic; - To specify the relationship between the spatial planning and the land use management, amongst others 	<ul style="list-style-type: none"> - To be implemented upon the approval of the EMPR.
Subdivision of Agricultural Land Act, 70 of 1970 and regulations	<ul style="list-style-type: none"> - Regulations GN R239 published on 23 March 2015 in terms of SPLUMA - Regulations GN R373 published on 9 March 1979 in terms of Subdivision of Agricultural Land 	<ul style="list-style-type: none"> - To take note.
Basic Conditions of Employment Act (Act 3 of 1997) as amended	<ul style="list-style-type: none"> - To regulate employment aspects 	<ul style="list-style-type: none"> - To be implemented upon the approval of the EMPR
Community Development (Act 3 of 1966)	<ul style="list-style-type: none"> - To promote community development 	<ul style="list-style-type: none"> - To be implemented upon the approval of the EMPR
Development Facilitation (Act 67 of 1995) and regulations	<ul style="list-style-type: none"> - To provide for planning and development 	<ul style="list-style-type: none"> - To take note.

Development Facilitation (GN24, PG329, 24/07/1998)	- Regulations re Northern Cape LDO's	- To take note.
Development Facilitation (GNR1, GG20775, 07/01/2000)	- Regulations re application rules S26, S46, S59	- To take note.
Development Facilitation (GN732, GG14765, 30/04/2004)	- Determines amount, see S7(b)(ii)	- To take note.
Land Survey Act (Act 8 of 1997) and regulations, more specifically GN R1130	- To control land surveying, beacons etc. and the like; - Agriculture, land survey S10	- To take note.
National Veld and Forest Fire Act (Act 101 of 1998) and regulations, more specifically GN R1775	- To regulate law on veld and forest fires - (Draft regulations s21)	- To be implemented upon approval of the EMPR
Municipal Ordinance, 20/1974	- To control pollution, sewers etc.	- To be implemented upon approval of the EMPR
Municipal Ordinance, PN955, 29/08/1975	- Nature conservation Regulations	- To be implemented upon approval of the EMPR
Cape Land Use Planning Ordinance, 15/85	- To control land use planning	- To take note.
Cape Land Use Planning Ordinance, PN1050, 05/12/1988	- Land use planning Regulations	- To take note.

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)

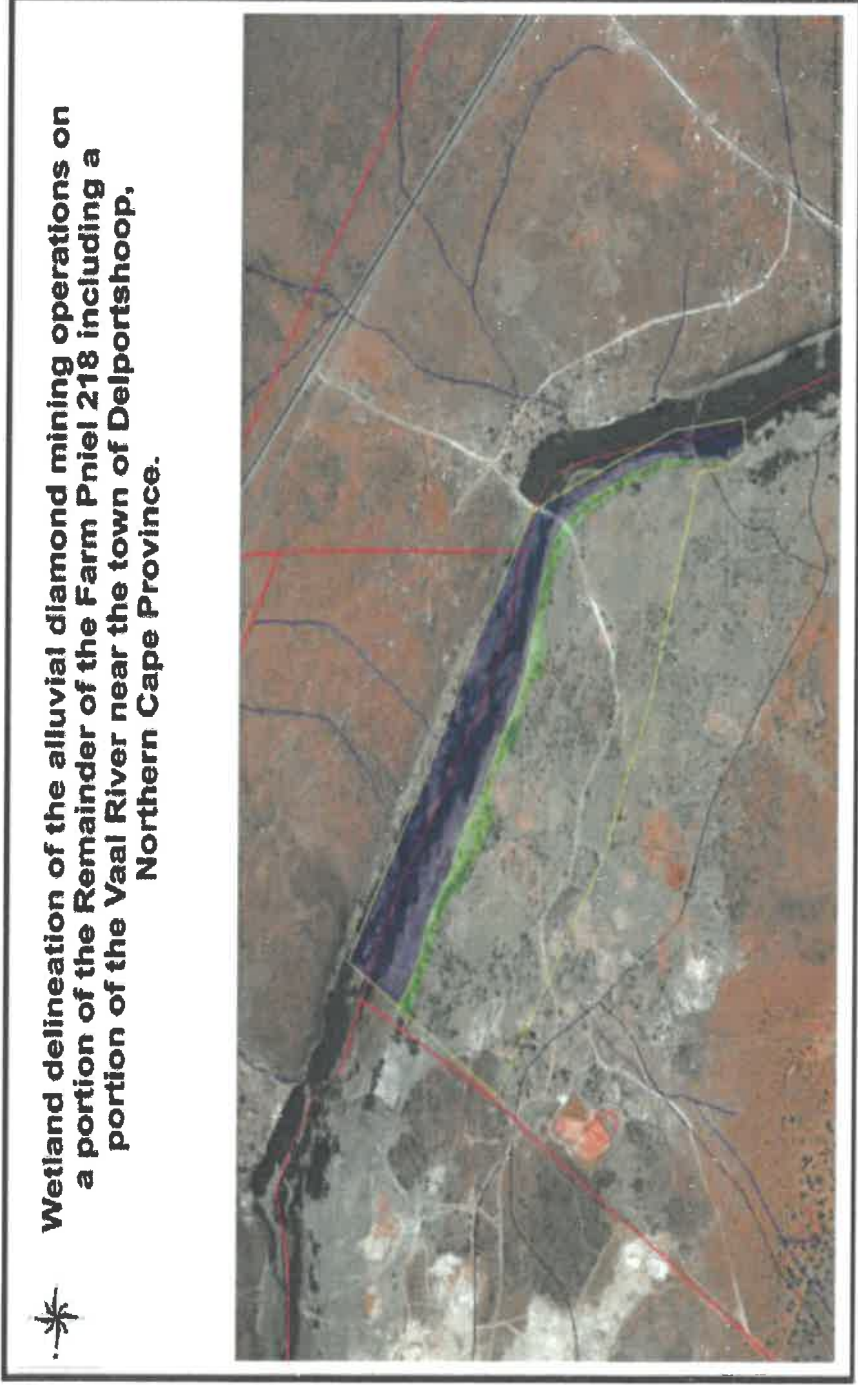
I hereby confirm that the requirement for the provision of the details and expertise of the EAP is already included in Part A as required.

- 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)

I hereby confirm that the requirement for the aspects of the activity is already included in Part A as required.

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 should be avoided, including buffers)



Map 1: Wetland delineation map for the proposed alluvial diamond mining operations near the town of Delpoortshoop. Note that the study area has been affected by previous mining which is clearly still visible. The wetland condition (Marginal and lower zones) along the river bank is indicated. The riparian zone (Upper zone) is also indicated. Note the braided river portion clearly visible along the northern section of the river. Mining should exclude the river (including riparian zone) as far as possible and should mining be desired in this area should be considered in order from low to high sensitivity. I.e. riparian zone, eastern river section, northern river section, braided main channel.



Prepared for:
Kimsa Mining (Pty) Ltd

- Legend:**
- Property boundaries
 - Application area
 - Road network
 - Watercourses
 - Wetland area
 - Riparian zone

Map Information
 S 29 4729207
 E 24 3879148
 Spheroid: WGS 84
 Scale: 1:10 000
 Quantum GIS

DPR Ecologists
 Contact Darius van Rensburg at:
 darus@dprecologists.co.za
 P.O. Box 12726, Brandhof, 9324
 Tel: 083 410 0770



Figure 14. A sensitivity map for the proposed mining area, indicating the braided river section in red that have to be excluded map taken out of the wetland and ecological study by DPR.

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 in 2.4 herein)

The main closure objectives of the planned mining operation are:

- To restore the site to its current land capability in a sustainable manner.
- To prevent the sterilization of any diamond reserves.
- To prevent the establishment of any permanent structures or features.
- To manage and limit any impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained when a closure certificate is issued.
- To establish a stable and self-sustainable vegetation cover.
- To limit and rehabilitate any erosion features and prevent any permanent impact to the soil capability.
- To limit and manage the visual impact of the mining activities.
- To safeguard the safety and health of humans and animals on the site.
- To close the mining operation efficiently, cost effectively and in accordance with Government Policy.

The key aim decommissioning and closure is to ensure that all the significant impacts are ameliorated. All rehabilitated areas should be left in a stable, self-sustainable state. Proof of this should be submitted at closure. Specific objectives include:

Rehabilitation of infrastructure areas

The objectives for the removal of infrastructure and the subsequent rehabilitation of the areas they occupied include:

- To ensure that infrastructure identified for removal is successfully demolished and removed.
- To ensure that infrastructure identified to remain after mine closure is maintained until the issue of a closure certificate.
- The removal, decommissioning and disposal of all mining infrastructure, will comply with all conditions contained in the MPRDA. To this end, decommissioning and rehabilitation of all infrastructure areas will follow the following principles:
 - The plant and associated disused infrastructure will be dismantled or demolished. Any building foundations will be removed and land exposed to the demolition and dismantling of infrastructure and all other disturbed land will be rehabilitated.
 - Rubble will be disposed of at a suitable site. The site will be selected in consultation with DENC.

- Any surface water management infrastructure will be maintained to ensure they are stable and functional.
- Just before closure, when disturbed land has been rehabilitated and erosion is controlled by vegetation cover, all disused surface water management facilities will be decommissioned.

Mine Residue Dump (Porrel Dam)

The objectives pertaining to the effective management and rehabilitation of the Mine Residue Dump include:

- To ensure that the Mine Residue Dump deposit are stable and that there is an acceptably low risk of failure of these deposits during the decommissioning phase and following mine closure; To establish self-sustainable vegetation cover on the Mine Residue dump so that the visual impact of the Mine Residue dump is improved and in order to prevent erosion.

Management principles pertaining to Mine Residue dump include:

- The Mine Residue dump will continuously be inspected by a suitable qualified professional engineer to ensure their stability. If they are unstable, the appropriate remedial measures will be implemented.
- Inspection and monitoring should continue until a suitable qualified profession engineer has confirmed the long-term stability of the Mine Residue dump.
- Any infrastructure or facilities that serve the Mine Residue dump will be maintained to ensure that they are both stable and functional.

Maintenance

The necessary agreements and arrangement will be made by the Kimsa to ensure that all natural physical, chemical and biological processes for which a closure condition were specified are monitored until they reach a steady state or for three (3) years after closure or as long as deemed necessary at the time.

- Such processes include erosion of the Mine Residue dump, rehabilitated surfaces, surface water drainage, air quality, surface water quality, ground water quality, vegetative re-growth, weed encroachment.
- The closure plan will be reviewed yearly.
- Rehabilitation of the land will be maintained until a closure certificate is granted or until the land use is regarded as sustainable.
- All rehabilitated areas will be monitored and maintained until such time as required to enable the mine to apply for closure of these different areas.

Performance assessments

As per the MPRDA and associated Regulations, as well as NEMA and associated Regulations, this Environmental Management Programme will be continually assessed in terms of its appropriateness and adequacy. In order to achieve this, Kimsa will undertake the following:

- Implement the necessary monitoring programmes, as discussed as part of this EMPR;
- Conduct performance assessments of this EMPR; and
- Compile and submit the afore-mentioned performance assessment reports to the DMR. The frequency of the performance assessments will be annually. An independent and competent person will undertake all performance assessments.

Decommissioning and closure objectives

The key aim decommissioning and closure is to ensure that all the significant impacts are ameliorated. All rehabilitated areas will be left in a stable, self-sustainable state. Proof of this will be submitted at closure. Specific objectives include:

- To identify potential post-closure land uses in consultation with the surrounding land owners and land users. This should be done during the operational phase of the mine;
- Rehabilitate disturbed land to a state suitable for its post-closure uses;
- Rehabilitate disturbed land and mine residue deposits to a state that facilitates compliance with applicable environmental quality objectives;
- Limit the impact on staff whose positions become redundant at the time of mine closure, as addressed in the SLP;
- Keep relevant authorities informed of the progress of the decommissioning phase;
- Submit monitoring data to the relevant authorities;
- Maintain required pollution control facilities and rehabilitated land until closure.

Negative economic impacts

The objective is to alleviate the negative socio-economic impacts that will result from mine closure. Management principles to achieve this include:

- Kimsa will undertake a carefully planned step-wise decommissioning process.
- Closure planning will form an integral part of mine planning.
- Strategies for sustainable development have been and will continue to be developed by the project in collaboration with district and local authorities, local businesses and other interested parties. Early warning of impending closure will be given to IAPs.
- In conjunction with long-term closure planning, the mine will actively participate in regional and local planning to enhance the economic

benefits of the project through development of alternative forms of income generation.

- Klmswa will initiate and participate in regional planning exercises that will mitigate the impacts of closure of the mine, the local and regional economies and associated abandonment of community infrastructures surrounding the mine.
- The mine will fulfil the requirements for closure.

ii) The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity

There is won't be a need for this, as based on the specialist reports (Wetland and Ecological study by Darius van Rensburg of DPR Consulting Ecologists).

The site proposed for mining operations has been rated as being acceptable for the development. However, this is subject to the Vaal River being excluded as far as possible from mining activities and that comprehensive rehabilitation is implemented.

The study area is situated adjacent to the Gong Gong rural settlement. The study area proposed for alluvial diamond mining is located on the southern banks of the Vaal River and has an approximate extent of 110 hectares (Map 1). The study area also includes a portion of the Vaal River including the main channel, banks and floodplain. The banks of the river in this portion is considered to still be largely natural. However, the terrestrial portion of the site, i.e. interior, has been heavily affected by previous and recent mining operations without any adequate rehabilitation having been done and consequently this area is in a relatively poor condition largely altered from the natural condition.

The entire terrestrial portion of the study area has been transformed by previous mining operations (Map 1). The riparian zone associated with the Vaal River seems to be largely intact. Rehabilitation of the post mining environment was overall poorly done and consequently the re-establishment of natural vegetation is also poor with some areas unable to establish any kind of vegetation. Portions of the study area has however been able to establish a pioneer but largely indigenous vegetation layer. Whatever the case may be, the vegetation on the site, although indigenous, must be considered to be of secondary establishment.

The previous mining operations must be regarded as the most significant impact on the terrestrial portion of the study area (Map 1). Impacts associated with this include the initial removal of the natural vegetation layer. Associated

with this was also the removal of the topsoil layer, which was evidently not adequately replaced and consequently prevented the establishment of natural vegetation in many areas. This will also have implications for rehabilitation should the proposed mining operations take place. The topography has been altered to a large degree through the excavation of a large amount of material which was not replaced adequately in the post mining environment. Large areas consist of tailings of rounded gravel rocks and boulders and in these areas vegetation is unable to establish due to the absence of soil. The inadequate rehabilitation resulting from previous mining clearly indicate the high impact this has and the need for post mining rehabilitation and adequate management of topsoil.

A comparison of the vegetation in the adjacent area as derived from studies conducted by Bezuidenhout (1994) clearly shows affinities with the vegetation currently in the study area but also clearly illustrates that the study area is currently dominated by only a few species and mostly pioneers. Note also that this previous study already mentioned that the area was disturbed by mining operations which also indicates that the natural vegetation may be also different from the vegetation composition identified by them. However, this also indicates that if adequate rehabilitation is implemented that a vegetation community somewhat resembling the natural condition can be re-instated. When comparing the results from the above mentioned study as well as the small portion of remaining natural vegetation on the site with the vegetation currently dominating the study area the following conclusion can be made; It should be clear that it is heavily degraded but that a vegetation layer is in the process of re-establishing and that it already has some affinities with the surrounding natural or semi-natural vegetation. Given time it may be possible that the vegetation will advance to a condition which is somewhat similar to that of the surroundings.

From available aerial imagery (Google Earth 2006 – 2017) it is clear that previous mining activities has taken place for quite some time and it is also clear how vegetation has become re-established in many areas (Fig. 6 & 7).

In conclusion, from the survey of the terrestrial portion of the study area it is clear that previous mining operations has transformed and removed the natural vegetation and has also altered the topography and soil profile to a large degree (Map 1). Vegetation has become re-established in many areas but is still in an early stage of succession and dominated by pioneer species with a low species diversity. As a consequence the conservation value of the ecology on the site is relatively low. The habitat and species diversity is consequently also very low. Furthermore, being dominated by pioneer species no protected, rare or endangered species could be identified on the site. Such species are often adapted to specialised habitats in good conditions and it is therefore highly unlikely that such a species would occur on the site. However, the poorly

rehabilitated study area should clearly illustrate the importance of comprehensive rehabilitation, re-instatement of the natural topography as far as possible as well as the correct management of topsoil. It is also evident that through adequate rehabilitation it is possible to re-instate a natural vegetation layer similar to that of the surrounding natural areas.

The Vaal River forms part of the northern and eastern border of the proposed mining area (Map 1). Obligate wetland vegetation was utilised to determine the presence and border of wetlands. Soil samples were used to determine the border and also to confirm the presence of wetland soils along the banks of the Vaal River (Appendix C) in the report. The soil samples taken along the banks of the Vaal River are clearly indicative of wetland conditions on a perennial basis (Map 1). The marginal and lower zones of the Vaal River contain distinctive wetland soil indicators. The Marginal Zone shows soil characters of a permanent zone of wetness.

The wetland conditions associated with the Vaal River can be characterised as a channel wetland system (SANBI 2009).

The Vaal River was surveyed by three separate locations along the section adjacent to the site. The length of river included in the study area is relatively long, approximately 2km (Map 1). The Vaal River, though well known to be degraded and modified, still performs several vital ecosystem services as well as services rendered to downstream users. The river in the study area is quite variable in terms of geomorphology though vegetation structure and species composition remains relatively similar.

Habitat and species diversity is considered significant and diverse, especially along the northern portion of the Vaal River. The site contains numerous habitats with the braided river section considered relatively unique (Map 1). As a result of these varied and rather unique habitats the diversity of species is relatively high. The area is capable of sustaining a large biomass and consequently contributes to species diversity. In comparison with the river section in this region this habitat type is uncommon and takes up a small percentage of the river habitats. The braided network and marginal zone is considered especially sensitive and unique. This must be seen in context that all watercourse systems must be regarded as sensitive systems although some habitats can be regarded as more unique than others.

An Index of Habitat Integrity (IHI) was conducted for the Vaal River for the section forming part of the study area (Appendix D) in the report. The IHI will be taken as representative of the Present Ecological State (PES) of this system. The largest impact on the site itself is considered historical alluvial diamond mining which has had a high impact on the site. Consequently almost the entire site has been transformed from the natural vegetation type and is currently dominated by pioneer species. This will undoubtedly also have an impact on

the ecological functioning of the Vaal River. Upstream impacts are also numerous and cause alteration in the functioning of the river. The most prominent impacts are alluvial diamond mining and construction of containment dams which alter the flooding regime and the functioning and habitat of the river and its floodplains. An Index of Habitat Integrity (IHI) was conducted along the Vaal River within the study area (Appendix D) in the report. The results of the IHI indicated that the Vaal River has an Instream IHI of category C: Moderately Modified and Riparian IHI of category C: Moderately Modified. This is largely due to the change in flooding regime and other significant impacts as well as historical alluvial diamond mining within the study area. The unique braided morphology of the river does increase the condition to some degree.

The EI&S of the floodplains associated with the Vaal River has been rated as being Moderate: Floodplains that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these floodplains are not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.

A Risk Assessment for the proposed mining area has been undertaken according to the Department of Water & Sanitation's requirements for risk assessment and the provisional Risk Assessment Matrix for Section 21(c) & (i) water use (Appendix E) in the report. Mining within the main channel or banks of the Vaal River or wetland areas as described will likely cause permanent modification of this system. Although a comprehensive rehabilitation and monitoring regime may decrease this risk it is still unlikely to ensure the re-establishment of current natural functioning. Consequently this is considered as a high risk for the Vaal River and associated wetland areas. This activity is therefore recommended to be excluded as far as possible and where desired that rehabilitation and monitoring be implemented at a high standard in order to re-establish functioning systems. Mining within close proximity to the Vaal River and associated wetland areas is anticipated to have a moderate risk and will likely still have significant impacts though unlikely to be permanent and will mostly influence sediment load and runoff values. Furthermore, through adequate mitigation these can be minimised and provided adequate rehabilitation is undertaken no additional and other permanent modification to the functioning of this system will result.

Due to the transformed and highly degraded condition of the interior of the study the loss of vegetation and habitat due to the proposed mining cannot be considered as high. Furthermore, this may present an opportunity to improve the habitat as long as adequate rehabilitation is undertaken after mining has occurred. Current rehabilitation was poorly undertaken which may however result in difficulties in terms of topsoil replacement since many areas does not contain any topsoil due to inadequate previous mining rehabilitation.

The impacts of alluvial diamond mining primarily affect the instream and riparian habitat due to riverbed degradation, increased suspended sediment and changes in the river morphology and hydraulics. Mining along the banks of the Vaal River is recommended to be excluded as far as possible and where desired that rehabilitation and monitoring be implemented at a high standard in order to re-establish functioning systems. Furthermore, should mining take place along the banks of the river this should be confined to the upper and lower zones and the marginal zone and main channel excluded in order to provide some buffer. In addition, should any mining of the bed or banks occur the extent should be kept to a minimum. The survey has indicated that the portion of the river along the northern part of the site consists of a more unique habitat and consequently should mining of the river banks be desired this should concentrate on the eastern, less unique, portion of the river with the mining of the northern portion being the last resort (Map 1). Where mining within the river is desired the only mitigation can be strict adherence to a comprehensive rehabilitation and monitoring plan. Mining operations within 100 meters or within the floodplain of the river and within 500 meters of wetland areas will require authorisation from DWS.

Mining in close proximity to the Vaal River will clear vegetation, disturb the soil surface and mobilise soils. This may cause high levels of sedimentation within the river. It is therefore recommended that measures be implemented to prevent sediment from entering the river. Due to the removal of vegetation and disturbance of the soil surface the mining areas will be highly susceptible to the establishment of invasive weeds. It is therefore recommended that weed control be judiciously and continually practised. Monitoring of weed establishment should form a prominent part of management of the mining area.

iii) Potential risk of Acid Mine Drainage (Indicate whether or not the mining can result in acid mine drainage)

No potential risk for Acid Mine Drainage exists.

iv) Steps taken to investigate, assess, and evaluate the impact of acid mine drainage

Not applicable, there is no potential risk of acid mine drainage.

v) Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage

Not applicable, there is no potential risk of acid mine drainage.

vi) Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage

There is no residual or cumulative impact that may result from acid mine drainage.

vii) Volumes and rate of water use required for the mining, trenching or bulk sampling operation

The only activity relating to the cost of water in the mining operations relates to dust suppression in the mining area and on the roads when hauling and transporting material to the processing plant, and doing continuous backfilling as part of the rehabilitation process.

It must however be noted that the water supply to the activities will be sourced from the nearby Vaal River. There will be an industrial rate applied for water used and the cost will be the pumping cost.

The processing plant (diamond pan) scrubbers and final recovery will have an impact on the cost of water used. The cost of water will have an upward trend over time as a result of the national capacity and demand situation. Water are however recycled as far as possible and redirected to the processing plants. It must however be noted that the water supply to the activities will be sourced from the Vaal River.

viii) Has a water use licence been applied for?

A new WULA application has been prepared and are in the final stages to be submitted. The EIA EMP is a minimum requirement for the application and therefor the application will be submitted shortly after the EIA EMP had been submitted to the competent authority. The Proof of submission will be sent onto the competent authority as soon as it is received.

ix) Impact to be mitigated in their respective phases

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

ACTIVITY Whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc... etc...etc.)	PHASE of operation in which activity will take place. State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure.	SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m ²)	MITIGATION MEASURES (describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)	COMPLIANCE WITH STANDARDS (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)	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme 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.
Processing Plant 2 X 16 feet pan	Construction Commissioning Operational Decommissioning Closure	0.5 ha Steel, concrete, electric wires	Access control Maintenance of processing plant Dust control and monitoring Noise control and monitoring Drip trays Storm water run-off control Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of		Removal of processing plant upon closure of mining right.

			vegetation cover		
Ablution facilities Chemical toilets	Construction Commissioning Operational Decommissioning Closure	25m ² or 0.0025ha	Maintenance of container Plants Removal of container plants upon closure	Removal of container plant upon closure of the Mining Right.	
Clean & Dirty water systems: Berms	Construction Commissioning Operational Decommissioning Closure	This area also includes the re-fuel and lubrication station, wash bay and office area.	Maintenance of berms and trenches Oil traps used in relevant areas. Drip trays used. Immediately clean hydrocarbon spill.	Upon cessation of the individual activity (continuous rehabilitation)	
Fuel facility (Diesel tanks)	Construction Commissioning Operational Decommissioning Closure	250m ² Concrete, bricks, and steel	Maintenance of diesel tanks and bund walls. Oil traps Drip tray at re-fuelling point Immediately clean hydrocarbon spill.	Removal of diesel tanks upon closure of Mining Right.	
Mining Area	Commissioning Operational Decommissioning Closure	Provision is made for a maximum footprint of 5 hectares of alluvial diamond excavations.	No dumping of materials prior to approval by exploration geologist; Proper planning of excavations Access control Dust control and monitoring Noise control and monitoring Continuous	Upon cessation of the individual activity (continuous rehabilitation)	

Salvage yard and laydown area)	Construction Commissioning Operational Decommissioning Closure	1000m ² or 0.1 ha No construction material, area to be levelled with a grader and fenced with a gate and access control	rehabilitation Stormwater run-off control Immediately clean hydrocarbon spill Drip trays Dump control and monitoring Erosion control Access control Maintenance of fence Storm water run-off control Immediately clean hydrocarbon spill	Removal of fence around salvage yard and ripping of salvage yard area upon closure of the mining right.
Waste disposal site (domestic and industrial waste):	Construction Commissioning Operational Decommissioning Closure	15m x 30m = 450m ²	Storage of Waste within receptacles Storage of hazardous waste on concrete floor with bund wall Removal of waste on regular intervals	Removal of waste receptacles, breaking and removal of rubble from the concrete floors and bund walls upon closure of mining right.
Roads (both access and haulage road on the mine site):	Construction Commissioning Operational Decommissioning Closure	Additional mine haul road = 5 000m ²	Maintenance of roads Dust control and monitoring Noise control and monitoring Speed limits Storm water run-off control Erosion control	Upon cessation of the individual activity (continuous rehabilitation) Ripping of roads upon closure of the mining right.

Workshop and Wash bay	Construction Commissioning Operational Decommissioning Closure	300m ² Concrete and Steel	Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of vegetation cover Concrete floor with oil/water separator Storm water run-off control Immediately clean hydrocarbon spills	Removal of wash bay equipment, breaking and removal of rubble from the concrete floors and bund walls upon closure of mining right
Water distribution Pipeline	Construction Commissioning Operational Decommissioning Closure	HDPE Pipes	Maintain water pipeline and structures	Removal of pipeline upon closure of the mining right.
Water tanks:	Construction Commissioning Operational Decommissioning Closure	3m X 3m = 9m ²	Maintain water tanks and structures	Removal of water tank and steel structure upon closure of the mining right.

e) Impact Management Outcomes

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

ACTIVITY Whether listed or not listed.	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater, contamination, air pollution)....	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. construction, commissioning, operational, decommissioning, closure, post closure)	MITIGATION TYPE (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	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Processing Plant 2 X 16 feet pan	Dust Noise Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance	Air Quality Fauna Flora Noise Soil Surface water Safety	Construction Commissioning Operational Decommissioning Closure	Access control Maintenance of processing plant Dust control and monitoring Noise and vibration control and monitoring Drip trays Storm water run-off control Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of vegetation cover Noise control Well maintained equipment Selecting equipment with lower sound power levels; Re-locate noise sources to areas which are less noise sensitive, to take	Safety ensured. Dust levels minimized Minimize potential for hydrocarbon spills to infiltrate into groundwater Noise levels minimized Rehabilitation standards and closure objectives to be met. Erosion potential minimized.

Ablution facilities Chemical Toilets	Soil contamination Possible Groundwater	Soil Groundwater	Construction Commissioning Operational Decommissioning	<p>advantage of distance and natural shielding; Develop a mechanism to record and respond to complaints.</p> <p>Maintain a buffer zone around the streams. Note that these buffer zones are essential to ensure healthy functioning and maintenance of wetland. Minimizing – unavoidable impacts shall be minimized by taking appropriate and practicable measures such as transplanting important plant specimens, confining works in specific area or season, restoration (and possibly enhancement) of disturbed areas, etc. Effluents and waste should be recycling and re-use as far as possible.</p>	Minimize the potential for a chemical spill on soil, which could infiltrate to groundwater.
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	contamination		Closure	closure	
Clean & Dirty water systems:	<p>Surface disturbance</p> <p>Groundwater Contamination</p> <p>Soil contamination</p> <p>Surface water contamination</p>	<p>Soil</p> <p>Groundwater</p> <p>Surface Water</p>	<p>Construction</p> <p>Commissioning</p> <p>Operational</p> <p>Decommissioning</p> <p>Closure</p>	<p>The re-vegetation of disturbed areas is important to prevent erosion and improve the rate of infiltration. Erosion channels that may develop before vegetation has established should be rehabilitated by filling, levelling and re-vegetation where topsoil is washed away.</p> <p>Monitoring and maintenance of oil traps in relevant areas.</p> <p>Drip trays used.</p> <p>Immediately clean hydrocarbon spill.</p> <p>Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.</p> <p>Maintain a buffer zone around the streams. Note</p>	<p>Safety ensured.</p> <p>Minimize potential for hydrocarbon spills to infiltrate into groundwater.</p> <p>Rehabilitation standards and closure objectives to be met.</p>

				that these buffer zones are essential to ensure healthy functioning and maintenance of wetland. Minimizing – unavoidable impacts shall be minimized by taking appropriate and practicable measures such as transplanting important plant specimens, confining works in specific area or season, restoration (and possibly enhancement) of disturbed areas, etc. Effluents and waste should be recycling and re-use as far as possible.	
Fuel facility (Diesel tanks)	Storage (Diesel tanks)	Groundwater contamination Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance	Soil Groundwater Surface water	Construction Commissioning Operational Decommissioning Closure	<p>Maintainance of Diesel tanks and bund walls. Oil traps Drip tray at re-fuelling point. Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution. Spill kits to clean up accidental spills from earthmoving machinery</p> <p>Minimize potential for hydrocarbon spills to infiltrate into groundwater. Rehabilitation standards and closure objectives to be met.</p>

				<p>must be well-marked and available on site. Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures. All facilities where dangerous materials are stored must be contained in a bund wall. Vehicles and machinery should be regularly serviced and maintained.</p>	
<p>Mining Area</p> <p>Dust</p> <p>Noise</p> <p>Removal and disturbance of vegetation cover and natural habitat of fauna</p> <p>Accelerated erosion of areas adjacent to workings that have been de-vegetated leads to increased suspended sediment loads in</p>	<p>Air quality</p> <p>Fauna</p> <p>Flora</p> <p>Groundwater</p> <p>Noise and vibration</p> <p>Soil</p> <p>Surface Water</p> <p>Topography</p> <p>Safety</p>	<p>Commissioning</p> <p>Operational</p> <p>Decommissioning</p> <p>Closure</p>	<p>Access control</p> <p>Dust control and monitoring</p> <p>Noise and vibration control and monitoring</p> <p>Continuous rehabilitation</p> <p>Storm water run-off control</p> <p>Immediately clean hydrocarbon spill</p> <p>Drip trays</p> <p>Dump stability control and monitoring</p> <p>Erosion control</p> <p>Noise control</p> <p>Well maintained equipment</p> <p>Selecting equipment with lower sound power levels;</p>	<p>Safety ensured.</p> <p>Dust levels minimized</p> <p>Minimize potential for hydrocarbon spills to infiltrate into groundwater</p> <p>Noise levels minimized</p> <p>Rehabilitation standards and closure objectives to be met.</p> <p>Erosion potential minimized.</p>	

	<p>nearby streams and rivers.</p> <p>Excavation of flood terraces and riverbanks increases the instability of these riverbanks and enhances the likelihood of increased flood scouring.</p> <p>Excavation of river sediments exposes these sediments to oxidising conditions and enhances the solubility and release of any metal ions that may previously have been previously trapped as insoluble sulphides.</p> <p>Wind-blown dusts from unprotected tailings and waste</p>		<p>Develop a mechanism to record and respond to complaints.</p> <p>Maintain a buffer zone around the streams. Note that these buffer zones are essential to ensure healthy functioning and maintenance of wetland. Minimizing – unavoidable impacts shall be minimized by taking appropriate and practicable measures such as transplanting important plant specimens, confining works in specific area or season, restoration (and possibly enhancement) of disturbed areas, etc. Effluents and waste should be recycling and re-use as far as possible.</p> <p>Mining activities must be planned, where possible in order to encourage (faunal dispersal) and should minimise dissection or fragmentation of any</p>	
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	<p>rock dumps enter aquatic environment.</p> <p>Soil contamination</p> <p>Surface disturbance</p> <p>Surface water contamination</p>		<p>important faunal habitat type.</p> <p>The extent of the mining area should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance). No construction personnel or vehicles may leave the demarcated area except those authorized to do so. Those areas surrounding the mine site that are not part of the demarcated development area should be considered as a no go zone for employees, machinery or even visitors.</p> <p>Appointment of a full-time ECO must render guidance to the staff and contractors with respect to suitable areas for all related disturbance, and must ensure that all contractors and workers undergo Environmental Induction prior to commencing with work on site.</p>	
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				<p>All those working on site must undergo environmental induction with regards to fauna and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition.</p> <p>All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.</p> <p>The environmental induction should occur in the appropriate languages for the workers who may require translation.</p> <p>Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert.</p> <p>Employ measures that ensure adherence to the speed limit.</p> <p>Careful consideration is</p>	
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				<p>develop before vegetation has established should be rehabilitated by filling, levelling and re-vegetation where topsoil is washed away.</p> <p>Implementation of a suitable management action plan during the operation of the proposed diamond mine, based on analysis of bi-annual water quality and biological monitoring data collected at sites upstream and downstream of all activities;</p> <p>Prevention of exotic vegetation encroachment;</p> <p>Prevent further siltation within the river segment as well as downstream of activities;</p> <p>Unnecessary destruction of marginal and in-stream habitat should always be avoided during operations.</p>	
Salvage yard and (Storage)	Groundwater contamination	Fauna Flora Groundwater	Construction Commissioning Operational	Access Control Maintenance of fence Storm water run-off	Minimize potential for hydrocarbon spills to infiltrate into

laydown area)	Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance Surface water contamination	Soil Surface Water	Decommissioning Closure	control Immediately clean hydrocarbon spill	groundwater Rehabilitation standards and closure objectives to be met. Erosion potential minimized.
Product Stockpile area	Dust Noise Removal and disturbance of vegetation cover and natural habitat of fauna Surface disturbance	Air Quality Fauna Flora Noise Soil Surface Water	Commissioning Operational Decommissioning Closure	Dust Control and monitoring Noise control and monitoring Drip trays Storm water run-off control Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of vegetation cover Noise control Well maintained equipment Selecting equipment with lower sound power levels; Re-locate noise sources to areas which are less noise sensitive, to take	Dust levels minimized Minimize potential for hydrocarbon spills to infiltrate into groundwater Noise levels minimized Rehabilitation standards and closure objectives to be met. Erosion potential minimized.

Waste disposal site (domestic and industrial waste):	Groundwater contamination Contamination of soil Surface water contamination	Groundwater Soil Surface water	Construction Commissioning Operational Decommissioning Closure	advantage of distance and natural shielding; Taking advantage during the design stage of natural topography as a noise buffer; Develop a mechanism to record and respond to complaints. Storage of Waste within receptacles Storage of hazardous waste on concrete floor with bund wall Removal of waste on regular intervals	Minimize potential for hydrocarbon spills to infiltrate into groundwater Noise levels minimized Rehabilitation standards and closure objectives to be met.
Roads (both access and haulage road on the mine site):	Dust Noise Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance	Air quality Fauna Flora Noise and vibration Soil Surface water	Construction Commissioning Operational Decommissioning Closure	Maintenance of roads Dust control and monitoring Noise control and monitoring Speed limits Storm water run-off control Erosion control Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of vegetation cover	Dust levels minimized Minimize potential for hydrocarbon spills to infiltrate into groundwater Noise levels minimized Rehabilitation standards and closure objectives met. Erosion potential minimized.

				<p>Noise control Well maintained equipment Selecting equipment with lower sound power levels; Re-locate noise sources to areas which are less noise sensitive, to take advantage of distance and natural shielding; Taking advantage during the design stage of natural topography as a noise buffer; Develop a mechanism to record and respond to complaints.</p> <p>Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.</p>	
Workshop and Wash bay	Removal and disturbance of vegetation cover and natural habitat of fauna	Groundwater Soil Surface water	Construction Commissioning Operational Decommissioning Closure	Concrete floor with oil/water separator Storm water run-off control Immediately clean	Minimize potential for hydrocarbon spills to infiltrate into groundwater Noise levels minimized

	Soil contamination			hydrocarbon spills	Rehabilitation standards and closure objectives to be met. Erosion potential minimized.
Water distribution Pipeline	Surface disturbance	Fauna Flora Surface Water	Construction Commissioning Operational Decommissioning Closure	Monitor pipeline for water leaks Maintenance of pipeline Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.	Rehabilitation standards and closure objectives to be met. Erosion potential minimized.
Water tanks:	Surface disturbance	Fauna Flora Surface Water	Construction Commissioning Operational Decommissioning Closure	Maintain water tanks and structures	Safety ensured. Rehabilitation standards and closure objectives to be met.

f) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraph (c)

ACTIVITY Whether listed or not listed.	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater, contamination, air pollution)....	MITIGATION TYPE (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	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required.	COMPLIANCE WITH STANDARDS (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
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			<p>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>	Competent Authorities)
<p>Processing Plant: 2 X 16 feet pan</p>	<p>Dust Noise Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance</p>	<p>Access control Maintenance of processing plant Dust control and monitoring Noise and vibration control and monitoring Drip trays Storm water run-off control Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of vegetation cover Noise control Well maintained equipment Selecting equipment with lower sound power levels; Re-locate noise sources to areas which are less noise sensitive, to take advantage of distance and natural shielding; Taking advantage during the design stage of natural topography as a noise buffer; Develop a mechanism to record and respond to complaints. Maintain a buffer zone around the streams. Note that these buffer zones are essential to</p>	<p>Removal of processing plant upon closure of mining right.</p>	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's <p>Management and staff must be trained to understand the contents of these documents and to adhere thereto.</p> <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan. • Management and staff must be trained to understand the contents of these documents,

Ablution Facilities Chemical Toilets.		ensure healthy functioning and maintenance of wetland. Minimizing – unavoidable impacts shall be minimized by taking appropriate and practicable measures such as transplanting important plant specimens, confining works in specific area or season, restoration (and possibly enhancement) of disturbed areas, etc. Effluents and waste should be recycling and re-use as far as possible.		and to adhere thereto. Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.
Soil contamination Groundwater contamination	Maintenance of sewage facilities on a regular basis. Removal of container plants on closure	Removal of container plant upon closure of the Mining Right.		The following must be placed at the site and is applicable to all activities: <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's Management and staff must be trained to understand the contents of these documents and to adhere thereto. <ul style="list-style-type: none"> • Environmental Awareness

<p>Clean & Dirty water Berms systems:</p>	<p>Surface disturbance Groundwater Contamination Soil contamination Surface water contamination</p>	<p>It will be necessary to divert storm water around dump areas by construction of a temporary gravel cut-off berm that will prevent surface run-off into the mining area.</p> <p>Excavations, where and when applicable, should be rehabilitated concurrently as mining progresses. The re-vegetation of disturbed areas is important to prevent erosion and improve the rate of infiltration. Erosion channels that may develop before</p>	<p>Upon cessation of the individual activity (continuous rehabilitation) Levelling of storm water berms upon closure of Mining Right</p>	<p>training must be provided to employees.</p> <ul style="list-style-type: none"> • The operation must have a rehabilitation and closure plan. • Management and staff must be trained to understand the contents of these documents, and to adhere thereto. <p>Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</p> <p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's <p>Management and staff must be trained to understand the contents of these documents and to adhere thereto.</p>
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		<p>vegetation has established should be rehabilitated by filling, levelling and re-vegetation where topsoil is washed away.</p> <p>Maintenance of trenches</p> <p>Monitoring and maintenance of oil traps in relevant areas.</p> <p>Drip trays used.</p> <p>Immediately clean hydrocarbon spill.</p> <p>Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.</p> <p>Maintain a buffer zone around the streams. Note that these buffer zones are essential to ensure healthy functioning and maintenance of wetland.</p> <p>Minimizing – unavoidable impacts shall be minimized by taking appropriate and practicable measures such as transplanting important plant specimens, confining works in specific area or season, restoration (and possibly enhancement) of disturbed</p>	<ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan. • Management and staff must be trained to understand the contents of these documents, and to adhere thereto. <p>Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</p>
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Fuel facility tanks)	Storage (Diesel tanks)	Groundwater contamination Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance	areas, etc. Effluents and waste should be recycling and re-use as far as possible. Maintenance of Diesel tanks and bund walls. Oil traps Drip tray at re-fuelling point. Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution. Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site. Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures. All facilities where dangerous materials are stored must be contained in a bund wall. Vehicles and machinery should be regularly serviced and maintained.	Removal of diesel tanks upon closure of Mining Right.	The following must be placed at the site and is applicable to all activities: <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's Management and staff must be trained to understand the contents of these documents and to adhere thereto. <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan. • Management and staff must be trained to understand the contents of these documents, and to adhere thereto.
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Mining Area.	<p>Dust</p> <p>Noise</p> <p>Removal and disturbance of vegetation cover and natural habitat of fauna</p> <p>Accelerated erosion of areas adjacent to workings that have been de-vegetated leads to increased suspended sediment loads in nearby streams and rivers.</p> <p>Excavation of flood terraces and riverbanks increases the instability of these riverbanks and enhances the likelihood of</p>	<p>Access control</p> <p>Dust control and monitoring</p> <p>Noise and vibration control and monitoring</p> <p>Continuous rehabilitation</p> <p>Storm water run-off control</p> <p>Immediately clean hydrocarbon spill</p> <p>Drip trays</p> <p>Dump stability control and monitoring</p> <p>Erosion control</p> <p>Noise control</p> <p>Well maintained equipment</p> <p>Selecting equipment with lower sound power levels;</p> <p>Re-locate noise sources to areas which are less noise sensitive, to take advantage of distance and natural shielding;</p> <p>Taking advantage during the design stage of natural topography as a noise buffer;</p> <p>Develop a mechanism to record and respond to complaints.</p> <p>Maintain a buffer zone around</p>	<p>Upon cessation of the individual activity (continuous rehabilitation)</p>	<p>Annual performance Assessment Reports and quantum</p> <p>Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</p> <p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's <p>Management and staff must be trained to understand the contents of these documents and to adhere thereto.</p> <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan. • Management and staff must be trained to understand the contents of these documents,
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<p>increased flood scouring.</p> <p>Excavation of river sediments exposes these sediments to oxidising conditions and enhances the solubility and release of any metal ions that may previously have been previously trapped as insoluble sulphides.</p> <p>Wind-blown dusts from unprotected tailings and waste rock dumps enter aquatic environment.</p> <p>Soil contamination</p> <p>Surface disturbance</p> <p>Surface water contamination</p>	<p>the streams. Note that these buffer zones are essential to ensure healthy functioning and maintenance of wetland.</p> <p>Minimizing – unavoidable impacts shall be minimized by taking appropriate and practicable measures such as transplanting important plant specimens, confining works in specific area or season, restoration (and possibly enhancement) of disturbed areas, etc.</p> <p>Effluents and waste should be recycling and re-use as far as possible.</p> <p>Mining activities must be planned, where possible in order to encourage (faunal dispersal) and should minimise dissection or fragmentation of any important faunal habitat type.</p> <p>The extent of the mining area should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance).</p> <p>Appointment of a full-time ECO must render guidance to the staff and contractors with</p>	<p>and to adhere thereto.</p> <p>Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</p>
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		<p>respect to suitable areas for all related disturbance, and must ensure that all contractors and workers undergo Environmental Induction prior to commencing work on site.</p> <p>All those working on site must undergo environmental induction with regards to fauna and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition.</p> <p>All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.</p> <p>The environmental induction should occur in the appropriate languages for the workers who may require translation.</p> <p>Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert.</p> <p>Employ measures that ensure adherence to the speed limit.</p> <p>Careful consideration is required when planning the placement for stockpiling topsoil and the</p>		
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		<p>creation of access routes in order to avoid the destruction of habitats and minimise the overall mining footprint. The Footprint areas of the mining activities must be scanned for Red Listed and protected plant species prior to mining;</p> <p>Snares & traps removed and destroyed; and</p> <p>Maintenance of firebreaks.</p> <p>Excavations, where and when applicable, should be rehabilitated concurrently as mining progresses. The re-vegetation of disturbed areas is important to prevent erosion and improve the rate of infiltration. Erosion channels that may develop before vegetation has established should be rehabilitated by filling, levelling and re-vegetation where topsoil is washed away. Implementation of a suitable management action plan during the operation of the proposed diamond mine, based on analysis of bi-annual water quality and biological monitoring data collected at sites upstream and</p>		
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Salvage yard and laydown area)	Surface Water contamination Groundwater contamination Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance Surface water contamination	downstream of all activities; Prevention of exotic vegetation encroachment; Prevent further siltation within the river segment as well as downstream of activities; Unnecessary destruction of marginal and instream habitat should always be avoided during operations.	Removal of fence around salvage yard and ripping of salvage yard area upon closure of the mining right.	
		Access Control Maintenance of fence Storm water run-off control Immediately clean hydrocarbon spill		The following must be placed at the site and is applicable to all activities: <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's Management and staff must be trained to understand the contents of these documents and to adhere thereto. <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan.

<p>Product Stockpile area</p>	<p>Surface Water contamination Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance Surface water contamination</p>			<ul style="list-style-type: none"> Management and staff must be trained to understand the contents of these documents, and to adhere thereto. <p>Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</p>
			<p>Dust Control and monitoring Noise control and monitoring Drip trays Storm water run-off control Immediately clean hydrocarbon spills Rip disturbed areas to allow regrowth of vegetation cover Noise control Well maintained equipment Selecting equipment with lower sound power levels; Re-locate noise sources to areas which are less noise sensitive, to take advantage of distance and natural shielding; Taking advantage during the design stage of natural topography as a noise buffer; Develop a mechanism to record and respond to complaints.</p>	<p>Dust levels minimized Minimize potential for hydrocarbon spills to infiltrate into groundwater Noise levels minimized Rehabilitation standards and closure objectives to be met. Erosion potential minimized.</p>

<p>Waste disposal site (domestic and industrial waste):</p>	<p>Groundwater contamination Surface Water contamination Contamination of soil Surface water contamination</p>	<p>Storage of Waste within receptacles Storm water control Ground water monitoring Storage of hazardous waste on concrete floor with bund wall Removal of waste on regular intervals</p>	<p>Removal of waste receptacles, breaking and removal of rubble from the concrete floors and bund walls upon closure of mining right.</p>	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's <p>Management and staff must be trained to understand the contents of these documents and to adhere thereto.</p> <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan. • Management and staff must be trained to understand the contents of these documents, and to adhere thereto. <p>Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres</p>
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Roads (both access and haulage road on the mine site):	Dust Surface Water contamination Groundwater contamination Noise Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance	Maintenance of roads Dust control and monitoring Noise control and monitoring Speed limits Storm water run-off control Erosion control Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of vegetation cover Noise control Well maintained equipment Selecting equipment with lower sound power levels; Re-locate noise sources to areas which are less noise sensitive, to take advantage of distance and natural shielding; Taking advantage during the design stage of natural topography as a noise buffer; Develop a mechanism to record and respond to complaints. Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.	Upon cessation of the individual activity (continuous rehabilitation) Ripping of roads upon closure of the mining permit.	to the contents of the EIA and EMP documents. The following must be placed at the site and is applicable to all activities: <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's Management and staff must be trained to understand the contents of these documents and to adhere thereto. <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan. • Management and staff must be trained to understand the contents of these documents, and to adhere thereto. Annual performance Assessment
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<p>Workshop and Wash bay</p>	<p>Surface Water contamination Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination</p>	<p>Concrete floor with oil/water separator Storm water run-off control Immediately clean hydrocarbon spills</p>	<p>Removal of wash bay equipment, breaking and removal of rubble from the concrete floors and bund walls upon closure of mining right</p>	<p>Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</p> <p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's <p>Management and staff must be trained to understand the contents of these documents and to adhere thereto.</p> <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan. • Management and staff must be trained to understand the contents of these documents,
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Water distribution Pipeline	Surface disturbance	Monitor pipeline for water leaks Maintenance of pipeline Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.	Removal of pipeline upon closure of the mining right.	<p>and to adhere thereto.</p> <p>Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</p>
<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's <p>Management and staff must be trained to understand the contents of these documents and to adhere thereto.</p> <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure plan. • Management and staff must 				

<p>Water tanks:</p>	<p>Surface disturbance</p>	<p>Maintain water tanks and structures</p>	<p>Removal of water tank and steel structure upon closure of the mining right.</p>	<p>be trained to understand the contents of these documents, and to adhere thereto. Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</p>
<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> • Relevant Legislation; • Acts; • Regulations • COP's • SOP's <p>Management and staff must be trained to understand the contents of these documents and to adhere thereto.</p> <ul style="list-style-type: none"> • Environmental Awareness training must be provided to employees. • The operation must have a rehabilitation and closure 				

				<p>plan.</p> <ul style="list-style-type: none">• Management and staff must be trained to understand the contents of these documents, and to adhere thereto. <p>Annual performance Assessment Reports and quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA and EMP documents.</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 Regulation 22(2)(d) as described in 2.4 herein.**

Closure:

The main closure objective of this mine is to rehabilitate the mined areas in such a way to ensure that the rehabilitated topographical landscape would blend in with the surrounding landscape, would not pose a safety hazard for human and animal, but at the same time allow a certain alternative land use. Establish a self-sustaining and stable vegetation cover in order to mitigate the visual impact, to control erosion and to create some habitat for animals. The rehabilitated environment also needs to be aesthetically acceptable according to the principle of BPEO.

Kimswa will ensure that the mine site is:

- Neither a danger to public health and safety nor to animal health and safety.
- Not a source of any pollution.
- Stable (ecological and geophysical).
- Rehabilitated to the state that is suitable for the predetermined and agreed land use.
- Compatible with the surrounding biophysical environment.
- A sustainable environment.
- Aesthetically acceptable.
- Not an economic, social or environmental liability to the local community or the state now or in the future.

Kimswa will ensure that the physical and chemical stability of the rehabilitated mining site will be such that risk to the environment is not increased by naturally occurring forces to the extent that such increased risk cannot be contended with by the installed measures.

Kimswa will subscribe to the optimal exploitation and utilization of South Africa's mineral resources (diamonds).

Kimswa will ensure that the mining site is closed efficiently and cost effectively.

Kimswa will ensure that the operation is not abandoned but closed in accordance with the relevant requirements.

Kimswa will ensure that the interest of all interested and affected parties will be considered.

Kimswa will ensure that the all-relevant legislation regarding mine closure will be adhered to, and all relevant application procedures followed.

The management of environmental impacts:

With regard to the extension, the mitigation of all environmental impacts on all applicable aspects uses BPEO (Best practical environmental option) principles.

- Optimal utilization and maintenance of existing mine facilities in a well-planned manner.
- To take care that no new land surface, habitats of vegetation and animals are destroyed, disturbed or alienated unnecessarily.
- To contain and prevent any pollution (physical and chemical) from the mining operation within structures, facilities provided therefore.
- To ensure an effective surface run-off control system in order to deal with the separation of clean and dirty water environment.
- The sustainable and responsible utilization (re-use) of all water resources and the prevention of pollution thereof.
- The sustainable rehabilitation of the mining site (excavations, topsoil- & overburden stockpiles, rest of terrain) in order to address all environmental impacts as far as practical.

Historical and Cultural aspects:

The mining permit area has been disturbed by previous mining activities.

A number of sites of cultural (archaeological and historical) heritage significance were found in the area. Some of the historical sites are related to past mining activities on the application area.

The sites are of low to high significance.

Finally, it should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should therefore be taken during any

development activities that if any of these are accidentally discovered, a qualified archaeologist be called in to investigate.

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

The Department Public Works have been notified and all documents have been sent to them for comments and concerns they are the surface owner and consultation is still ongoing. All environmental documents were also mailed to them for comments and concerns.

- (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 of land disturbed by the operation during the life of the mining permit will be accompanied by ongoing monitoring of the environment, until a stable state is reached. The main objectives are to have an uncontaminated, rehabilitated and safe environment, and to restore the area and habitats to a condition acceptable for obtaining a closure certificate.

Final rehabilitation of the site is expected to be within 5 years after the permit has been granted. Final rehabilitation will be executed systematically and will consist of the elements and procedures as listed below. More realistic closure elements will be fully determined by a Professional Mine Surveyor once the operation is active.

Dismantling of processing plant and related structures:

- The processing plant in total is expected to cover an area of ± 300 m², of which all should be dismantled and removed. This includes related infrastructures, equipment, machinery, screening plant, and other items used during the processing activities, such as conveyor belts, pipelines and power lines.
- The topography should then be restored to its natural contours, and any compacted area should be ripped to a depth no deeper than 300 mm;
- The prepared surfaces should then be covered with 300 mm of topsoil or suitable growth medium, which includes a viable seed bank; in order to encourage restoration of natural vegetation.

Demolition of steel buildings and structures:

- All steel buildings and structures are expected to amount to 1500 m². These include mobile stores, workshops, offices, ablutions, water tanks, etc. Those in disuse and which cannot be sold, donated, or used for future purposes should be dismantled and removed or demolished.
- Any associated foundations associated with dismantled steel buildings and structures should also be demolished to 1 m below ground level;
- The topography should then be restored to its natural contours, and any compacted area should be ripped to a depth no deeper than 300 mm;
- The prepared surfaces should then be covered with 300 mm of topsoil or suitable growth medium, which includes a viable seed bank; in order to encourage restoration of natural vegetation.

Demolition of reinforced concrete buildings and structures

- All brick buildings and concrete structures are expected to amount to ± 250 m². These include French drains, wash bays, refuelling depots and concrete floors. Those in disuse and which cannot be donated or used for future purposes should be demolished.
- The foundations of these buildings should also be demolished and to a depth of 1 m below ground level;
- The topography should then be restored to its natural contours, and any compacted area should be ripped to a depth no deeper than 300 mm;
- The prepared surfaces should then be covered with 300 mm of topsoil or suitable growth medium, which includes a viable seed bank; in order to encourage restoration of natural vegetation.

Rehabilitation of access roads

- Mine roads in total, is expected to cover an area of 5 000 m². After general site rehabilitation has been completed, all redundant roads should be ripped or ploughed.
- The prepared surfaces should then be covered with 300 mm of topsoil or suitable growth medium, which includes a viable seed bank; in order to encourage restoration of natural vegetation.

Demolition and rehabilitation of electrified railway lines

- There are no electrified railway lines associated with the mining activities.

Demolition and rehabilitation of non-electrified railway lines

- There are no non-electrified railway lines associated with the mining activities.

Demolition of housing and/or administration facilities

- There are no other housing or administration facilities associated with the mining activities, other than those in the form of mobile containers. These were however included in the section for demolition of steel buildings and structures.

Opencast rehabilitation including final voids and ramps

- Opencasts and ramps associated with the mining activities are expected to cover 0.5ha at any time.
- In-filling of the pits should take place concurrently and by obtaining material from the closest adjacent excess material heaps;
- The topography should then be shaped to the natural contours;
- The prepared surfaces should finally be covered with 300 mm of topsoil or suitable growth medium, which includes a viable seed bank; in order to encourage restoration of natural vegetation.

Sealing of shafts, adits and inclines

- There are no shafts associated with the mining activities.

Rehabilitation of overburden and spoils

- The total final overburden and spoils are estimated to amount to 2 ha and includes waste dumps as well as earth walls. Pre-planning should be conducted in order to decide the fate of these features. For example, if the material from these features will be used for in-filling, or if the features will remain after closure.
- The slopes of those features selected to remain after closure, should be downgraded to such an extent that they are not visually intrusive to the skyline after closure, and/or at least have an average outer slope of 1:3 (18°); or as predetermined by a specialist, depending on the type of material;
- The prepared surfaces should then be covered with 300 mm of topsoil or suitable growth medium, which includes a viable seed bank; in order to encourage restoration of natural vegetation, to ensure stability, improve the visual impact, and minimise erosion.

Rehabilitation of processing waste deposits and evaporation ponds with pollution potential

- No processing waste deposits and evaporation ponds with pollution potential are associated with the mining activities.

Rehabilitation of processing waste deposits and evaporation ponds with no pollution potential

- The processing waste deposits on the mining area is estimated to cover an area of ± 0.5 ha. Pre-planning should be conducted in order to decide the fate of this feature. For example, if the material from these features will be used for in-filling, or if the features will remain after closure.
- The toe trenches should be backfilled by obtaining material from the closest adjacent heaps deemed appropriate for such purpose;

The slopes of those features selected to remain after closure, should be downgraded to such an extent that they are not visually intrusive to the skyline after closure, and/or at least have an average outer slope of 1:3 (18°); or as predetermined by a specialist, depending on the type of material;

- For backfilled trenches the topography should be shaped to be in line with the natural contours, but where compaction occurred, the areas should be ripped to a depth no deeper than 300 mm;
- The prepared surfaces should then be covered with 300 mm of topsoil or suitable growth medium, which includes a viable seed bank; in order to encourage restoration of natural vegetation, to ensure stability, improve the visual impact, and minimise erosion.

Storm water management

Storm water runoff arising from the upper and outer slopes of the rehabilitated residue deposit should be managed to

- (1) prevent uncontrolled runoff from the residue deposit, which in turn creates surface erosion and resultant damage to the cover material and could also expose deposited material;
- (2) route the runoff arising from the rehabilitated residue deposit into the surrounding surface water drainage regime in a manner that would limit the creation of secondary erosion in the receiving surface water environment and/or possible damage to downstream surface infrastructure; and
- (3) allow for the control routing of the runoff collected on the rehabilitated residue deposit across cut-off, seepage or solution trenches provided to handle excess contaminated seepage from the residue deposit.

Rehabilitation of subsided areas

The EAP is not currently aware of any areas of subsidence on site. However, any potential for such occurrences should be actively

investigated and should be included in the rehabilitation plan, if and when such areas are identified.

General surface rehabilitation

- Final surface rehabilitation of areas disturbed by mining and related activities should be aligned to the selected final land use. General surface rehabilitation encompasses the reinstatement of natural topography, the top soiling and the re-vegetation of all those areas where infrastructure have been dismantled and removed or demolished. It also includes any industrial waste or scrap material that need to be removed from site. The total area that will need general surface rehabilitation at the time mine closure is estimated to be ± 0.5 ha.

River diversions

No river diversions are planned.

Fencing

It is not known at this stage if any fencing is planned.

Water management

No treatment of water will be necessary for the Prospecting activities.

Maintenance and aftercare

Maintenance and aftercare should be planned for two to three years after mine production have ceased and should include the following:

- Annual fertilising of rehabilitated areas.
- Monitoring of surface and subsurface water quality,
- Control of alien plants, and
- General maintenance, including rehabilitation of cracks and subsidence.
- Erosion control and monitoring of the slopes of the slimes dams;

Specialist study

A screening level risk assessment should be completed by a specialist environmental practitioner during mine closure in order to ensure that all of the rehabilitation objectives have been met and that all of the potential risks have been eliminated and/or are controlled. This assessment should specifically emphasis on those risks relating to river disturbances, groundwater quality and slope stabilities, but should not neglect progress made in natural vegetation restoration or success in alien invasive eradications. The current average specialist fees are estimated at R 50 000.

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

The rehabilitation plan was primarily designed with the closure objectives in mind and therefore it relates to all the various objectives as set out above in Section 1) g) 1) a) of this EMPR. In general, the main objectives are to have an uncontaminated, rehabilitated and safe environment, and to restore the mining area to a condition acceptable for obtaining a closure certificate. Each and every element in the rehabilitation plan was designed in order to meet these closure objectives.

The ultimate rehabilitation of the mining site that involves the sloping, levelling, replacement of topsoil and the seeding of an grass seed mix in areas that does not recover acceptably as agreed to by the land owner will ensure that the site could be regarded as safe for humans and animals and will also ensure that the site is stable from an erosion point of view and also ensuring that the site could be used for grazing again.

The removal of waste material of any description from the mining area and the disposal thereof at a recognised landfill facility.

- ❖ The removal of infrastructure, equipment, plant and other items from the site.
- ❖ The ripping of compacted areas to a level of 300mm and the levelling of such areas in order to re-establish a growth medium for plants (such areas will furthermore be seeded with a vegetation seed mix adapted to reflect the local indigenous flora that was present prior to the prospecting operation, if the re-establishment of vegetation is unacceptably slow.
- ❖ The mining of alluvial diamonds and the backfilling and covering thereof with previously stored topsoil (where-after this area will also be seeded with a vegetation seed mix adapted to reflect the local indigenous flora that was present prior to the proposed operation, and seedlings protected for a period of one) if the re-establishment of vegetation is unacceptably slow.

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

The total cost to rehabilitate and mitigate the Kimsa Mine site as it stands currently (risking premature rehabilitation) is estimated to be R1 058 895 according to the DMR calculations. The detailed calculation DMR quantum is presented in Table 9. The total rehabilitation costing is based on the assumption that the mining operation will do continuous concurrent rehabilitation throughout the project.

Table 9: Financial Quantum

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	m3	900	14.45	1	1	13005
2 (A)	Demolition of steel buildings and structures	m2	1500	201.35	1	1	302025
2(B)	Demolition of reinforced concrete buildings and structures	m2	250	286.75	1	1	74187.5
3	Rehabilitation of access roads	m2	5000	2	1	1	10000
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	349.71	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	190.75	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	402.7	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0.5	204951.85	0.04	1	4099.037
7	Sealing of shafts adits and inclines	m3	0	108.09	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	2	140732.19	1	1	281464.38
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0.5	175279.45	1	1	87639.725
8 (C)	Rehabilitation of processing waste deposits and evaporation	ha	0	509094.45	1	1	0
9	Rehabilitation of subsided areas	ha	0	117842.01	1	1	0
10	General surface rehabilitation	ha	0.5	27870.9	1	1	13935.45
11	River diversions	ha	0	111483.63	1	1	0
12	Fencing	m	0	127.17	1	1	0
13	Water management	ha	0	42389.21	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0.5	14836.22	1	1	7418.11
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum	0			1	0
						Sub Total 1	793774.202
1	Preliminary and General		47626.45212		weighting factor 2		
						1	47626.45212
2	Contingencies				79377.4202		79377.4202
						Subtotal 2	920778.07
						VAT (15%)	138116.71
						Grand Total	1058895

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

It is hereby confirmed that the financial provision will be provided as determined.

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) Mechanisms 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
Topography	To minimise the reduction of land capability.	To ensure that rehabilitation post-mining slopes are stable, free draining and no slopes have an angle in excess of 20°.	Site Manager/ Environmentalists	Monitoring will be done on an <i>annual basis</i> to ensure that the levels and the slopes are in order.
Soil	To prevent soil pollution; To limit soil compaction; To curb soil erosion; and To reinstate a growth medium able to sustain plant life.	Soil depth and chemical composition will be tested and possible erosion damage will be assisted and rectified.	Site Manager/ Environmentalists	Monitoring will be done on an <i>annual basis</i> or after a heavy rain event.
Air Quality	To control the incidence of unacceptable levels of dust pollution on site.	To ensure that the mine minimizes dust emissions, so that dust does not become a nuisance for affected parties and a health hazard.	Site Manager/Foreman appointed SHE Consultant	Visual inspections will be done and managed by dust suppression by a water tanker. Quarterly tests will also be conducted by a Safety Health and Environmental Consultant and submitted to Mine Health and Safety for monitoring purposes.
Fauna	To minimise vegetation destruction in mining areas, and therefore a habitat for wildlife; and To eliminate poaching and the extermination of animal species within the boundaries of the study area as well as the surrounding areas.	To ensure that the species diversity and abundance is not significantly reduces.	Site Manager/ Environmentalists	Monitoring will be done at rehabilitated area on an <i>annually basis</i> to investigate species diversity and abundance.
Flora	To minimise the destruction of vegetation units; and To control invasion of exotic and invasive plant species.	To ensure that the rehabilitated areas become self-maintaining.	Site Manager/ Environmentalists	Monitoring will be done at the rehabilitated areas on a <i>twice a year basis</i> (mid-summer and mid-winter), where species diversity and vegetation cover will be investigated.

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
Noise and Vibration	<p>To ensure that the legislated noise and ground vibration levels will be adhered to at all times.</p> <p>To control the incidence of unacceptable noise levels on site.</p>	<p>The management objective will be to reduce any level of noise, shock and lighting that may have an effect on persons or animals, both inside the plant and that which may migrate outside the plant area.</p>	<p>The manager during the construction phase and the responsible person (Manager / Environmental Department) during the Operational phase of the project.</p>	<p>Quarterly reports on fall-out noise monitoring will be conducted as required by legislation.</p> <p>If any complaints are received from the public or state department regarding noise levels the levels will be monitored at prescribed monitoring points.</p>
Surface Water	<p>To conserve water; and</p> <p>To eliminate the contamination of run-off.</p>	<p>The Vaal River are the nearest source in the vicinity of the mine. The Vaal River will be monitored by collecting surface water samples quarterly.</p>	<p>Site Manager/Water Supply</p>	<p>The Vaal River which may be impacted by the mining activity. Monitoring takes place by collecting surface water samples every quarter.</p> <p>Implementation of a suitable management action plan during the operation of the proposed diamond mine, based on analysis of bi-annual water quality and biological monitoring data collected at sites upstream and downstream of all activities (measure taken out of the aquatic study by DPR);</p>

l) Indicate the frequency of the submission of the performance assessment report

Auditing of compliance with environmental authorisation, the environmental management programme and the closure plan should be conducted annually by an independent EAP and an Environmental Audit Report should be compiled in such a way that it meets the requirements in terms of Regulation 34 of the National Environmental Management Act 107 of 1998): Environmental Impact Assessment Regulation, 2014.

The rehabilitation plan should also be reviewed annually in order to fulfil the requirements of Section 41(3) of the MPRDA and should be conducted by an independent EAP. Subsequently, an Annual Rehabilitation Plan should be developed to meet the various requirements set out in the National Environmental Management Act (No 107 of 1998) (NEMA) Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations (as amended in 2015).

These reports should be submitted annually to the Northern Cape DMR offices in Kimberley.

m) Environmental Awareness Plan

The objective of the environmental awareness plan is to ensure that:

- Training needs are identified and all personnel whose work may create a significant impact upon the environment have received appropriate training;
- All employees are aware of the impact of their activities
- Procedures are established and maintained to make appropriate employees aware of:
 - The significant environmental impacts (actual or potential) of their work activities and environmental benefits of improved personal performance,
 - Their roles and responsibilities in achieving conformance with environmental policies, procedures, and any implementation measures,
 - The potential consequences of departure from specified operating procedures.
- Personnel performing tasks, which can cause significant environmental impacts, are competent in terms of appropriate education, training and / or experience.

Environmental awareness will be part of the existing training and development plan. Key personnel with environmental responsibilities will be identified and the following principles will apply:

- Procedures will be developed to facilitate training of employees, on-site service providers and contractors;
- Environmental awareness will focus on means to enhance the ability of personnel and ensure compliance with the environmental requirements;

Top management will build awareness and motivate and reward employees for achieve environmental objectives;

- Environmental policies will be availed to mine employees and contractors;
- Environmental inductions will be conducted for employees, contractors and visitors;
- There will be an ongoing system of identifying training needs.

General environmental awareness training as part of the induction at the Kimswa operation should focus on the following:

- General environmental awareness
- The mine policies and vision concerning environmental management
- Legal requirements
- Mine activities and their potential impacts
- Different management measures to manage identified impacts
- Mine personnel's role in implementing environmental management objectives and targets

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

It is the responsibility of management to ensure that all employees, contractors and visitors are trained to understand the impacts of their tasks on the environment and to reduce them wherever possible. Environmental awareness should be part of the existing training and development plan. Key personnel with environmental responsibilities should be identified and the following principles should be applied:

- Procedures should be developed to facilitate training of employees, on-site service providers and contractors;
- Environmental awareness should focus on means to enhance the ability of personnel and ensure compliance with the environmental requirements;
- Top management should build awareness and motivate and reward employees for achieving environmental objectives;
- There should be an ongoing system of identifying training needs.
- An environmental, health and safety induction programme should be provided to all employees, contractors and visitors prior to commencing work or entering the site, and they should sign acknowledgement of the induction. An attendance register and agenda/programme should be filed for each induction.
- A daily "toolbox talk" should be held prior to commencing work, which will include discussions on health, safety and environmental considerations. The toolbox talks should be led by the site manager or the appointed supervisor/s.
- Refresher training should also be given to permanent employees and long-term contractors on an annual basis, to ensure that all are competent to perform their duties, thereby eliminating negative impacts on their safety, health and environment.

General environmental awareness training as part of the induction at ALS should focus on the following:

- General environmental awareness, which incorporates environmental, ecological and heritage elements;
- The mine policies and vision concerning environmental management;
- Legal requirements;
- Mine activities and their potential impacts;
- Different management measures to manage identified impacts;
- Mine personnel's role in implementing environmental management objectives and targets.

Environmental awareness topics to be covered in training should include:

- Natural resource management and conservation;
- Biodiversity awareness and conservation principles;
- Heritage resource awareness and preservation principles;
- Hazardous substance use and storage;
- Waste management; and
- Incident and emergency actions and reporting;

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

Environmental incident reporting will be a vital part of communication in order to deal with risks and ultimately avoid pollution or the degradation of the environment. Such communication should take place through the management, administrative and worker sectors of the operation, as well as contractors and visitors. Employees should be required to report any and all environmentally related problems, incidents and pollution, so that the appropriate mitigation actions can be implemented timeously. In the event of an environmental incident, the reporting procedure as indicated in the table below should be followed.

ENVIRONMENTAL INCIDENT REPORTING STRUCTURE	ACTIONS REQUIRED
Person causing or observing the incident	The first person causing or observing the incident shall report the incident to an immediate supervisor where the environmental incident is observed.
Line management in the relevant area of responsibility where the incident occurred	<p>Line management in the relevant area of responsibility where the incident occurred shall:</p> <ul style="list-style-type: none"> • Investigate the incident and record the following information: <ul style="list-style-type: none"> - How the incident happened; - The reasons the incident happened; - How rehabilitation or clean up needs to take place; - The nature of the impact that occurred; - The type of work, process or equipment involved; - Recommendations to avoid future such incidents and/or occurrences; • Inform the environmental manager/ECO and the Operations Manager on a daily basis of all incidents that were reported on site; • Consult with the relevant department/person for recommendations on actions to be taken or implemented where appropriate (e.g. clean-ups). • Assist the Environmental Manager and/or Operations Manager with applicable data in order to accurately capture the incident into the reporting database; • Ensure that remediation measures are implemented as soon as possible.

<p>Site managers</p>	<p>The site managers shall:</p> <ul style="list-style-type: none"> • Forward a copy of the incident form to other line managers; • Forward a copy of the incident form to the Environmental manager/ECO; • Inform the relevant department/person on a weekly basis of the incident by e-mail or by submitting a copy of the incident report. Once a High Risk Incident (any incident which results from a significant aspect and has the potential to cause a significant impact on the environment) occurred it must be reported immediately to the Environmental Manager and the Operations Manager by telephone or email to ensure immediate response/action. • Forward a copy of the completed Incident Reporting Form (and where applicable a copy of the incident investigation) to the relevant department/person.
<p>Environmental manager/ECO</p>	<p>The appointed environmental manager or ECO shall:</p> <ul style="list-style-type: none"> • Complete an incident assessment form to assess what level of incident occurred; • Make recommendations for clean-up and/or appropriate alternate actions; • Enter actions necessary to remediate environmental impacts into the database in conjunction with the responsible line manager; • Enter the incident onto the database in order to monitor the root causes of incidents; • Include the reported incidents in an appropriate monthly/quarterly report; • Highlight all incidents for discussion at HSEC meetings.

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

According to Section 41(3) of the MPRDA the holder of a Mining Permit must annually assess (and revise, if necessary) the total quantum of environmental liability for the operation and ensure that financial provision are sufficient to cover the current liability (in the event of premature closure) as well as the end-of-operation liability.

An Annual Rehabilitation Plan should be developed to match the various requirements set out in the NEMA regulations pertaining to the financial provision for prospecting, exploration, mining or production operations (as amended in 2015).

Officials in the DMR Regional Offices are required to assess, review and approve the quantum of financial provision submitted (that is, the monetary value of the financial provision that has been computed by the holder of a prospecting right, mining right or mining permit during the annual review) as being sufficient to cover the environmental liability at that time and for closure of the site at that time.

It is hereby confirmed that the financial provision shall be reviewed annually.

2) UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports;
- b) the inclusion of comments and inputs from stakeholders and I&APs;
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed.



Signature of the Environmental Assessment Practitioner:

Wadala Mining and Consulting (Pty) Ltd

Name of Company:

Date: 12 February 2019

- END -