

mineral resources

Department: Mineral Resources REPUBLIC OF SOUTH AFRICA

BASIC IMPACT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

The proposed Prospecting Right without Bulk Sampling application for the prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of Portion 2, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province.

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

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CLAUSE

This report has been compiled by Milnex 189 CC, using information provided by **Kimswa Mining (Pty) Ltd** the client as well as third parties, which information has been presumed to be correct. While Milnex 189 CC have made every endeavour to supply accurate information, and exercised all care, skill and diligence in the drafting of this report, errors and omissions may occur. Accordingly, Milnex 189 CC does not warrant the accuracy or completeness of the materials in this report. Milnex 189 CC does not accept any liability for any loss or damage which may directly or indirectly result from any advice, opinion, information, representation or omission, whether negligent or otherwise, contained in this report. Milnex 189 CC does not accept any liability for any loss or damage, whether direct, indirect or consequential, arising out of circumstances beyond the control of Milnex 189 CC, including the use and interpretation of this report by the client, its officials or their representatives or agents. This document contains information proprietary to Milnex 189 CC and as such should be treated as confidential unless specifically identified as a public document by law. Milnex 189 CC owns all copyright and all other intellectual property rights in this report. The document may not be copied, reproduced in whole or in part, or used for any manner without prior written consent from Milnex 189 CC. Copyright is specifically reserved in terms of the Copyright Act 98 of 1987 including amendments thereto. By viewing this disclaimer and by accepting this document, you acknowledge that you have read and accepted these Terms of Use and undertake to keep the information contained herein confidential and not to do any act or allow any act which is in breach of these Terms of Use.

IMPORTANT NOTICE

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

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

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

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

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

BASIC ASSESSMENT REPORT PROCESS

1) The environmental outcomes, impacts and residual risks of the proposed activity must be set out in the basic assessment report.

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

- 2) The objective of the basic assessment process is to, through a consultative process
 - a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
 - b) identify the alternatives considered, including the activity, location, and technology alternatives;
 - c) describe the need and desirability of the proposed alternatives[,];
 - d) through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage[], and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on [the] these aspects to determine
 - i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - ii) the degree to which these impacts
 - aa) can be reversed;
 - bb) may cause irreplaceable loss of resources; and
 - cc) can be avoided, managed or mitigated; and
 - e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to
 - i) identify and motivate a preferred site, activity and technology alternative;
 - ii) identify suitable measures to avoid, manage or mitigate identified impacts; and
 - iii) identify residual risks that need to be managed and monitored.

CONTENTS SCOPING OF ASSESSMENT AND CONTENT OF BASIC ASSESSMENT REPORT	7
A) DETAILS OF:	
 i) THE EAP WHO PREPARED THE REPORT 	
i) EXPERTISE OF THE EAP	
B) DESCRIPTION OF THE PROPERTY	
 C) LOCALITY MAP 	
D) DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY	
i) LISTED AND SPECIFIED ACTIVITIES	
ii) DESCRIPTION OF THE ASSOCIATED STRUCTURES AND INFRASTRUCTURE RELATED TO THE DEVELOPMENT	
E) POLICY AND LEGISLATIVE CONTEXT	16
F) NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.	20
G) MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT WITHIN THE APPROVED SITE INCLUDING A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED DEVELOPMENT FOOTPRINT WITHIN THE APPROVED SITE.	
H) A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED DEVELOPMENT FOOTPRINT WITHIN THE APPROVED SITE, INCLUDING:	21
i) DETAILS OF THE DEVELOPMENT FOOTPRINT ALTERNATIVES CONSIDERED;	21
ii) DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED	25
iii) SUMMARY OF ISSUES RAISED BY I&APS	29
iv) THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE SITES	34
v) IMPACTS AND RISKS IDENTIFIED INCLUDING THE NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT DURATION AND PROBABILITY OF THE IMPACTS, INCLUDING THE DEGREE TO WHICH THESE IMPACTS	
vi) METHODOLOGY USED IN DETERMINING AND RANKING THE NATURE, SIGNIFICANCE, CONSEQUENCI EXTENT, DURATION AND PROBABILITY OF POTENTIAL ENVIRONMENTAL IMPACTS AND RISKS	
vii) THE POSITIVE AND NEGATIVE IMPACTS THAT THE PROPOSED ACTIVITY (IN TERMS OF THE INITIAL S LAYOUT) AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY THAT MAY BE AFFECTED	
viii) THE POSSIBLE MITIGATION MEASURES THAT COULD BE APPLIED AND THE LEVEL OF RISK.	58
ix) MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED	59
 x) STATEMENT MOTIVATING THE ALTERNATIVE DEVELOPMENT LOCATION WITHIN THE OVERALL SITE. (Provide a statement motivating the final site layout that is proposed) 	
I) FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPAC AND RISKS THE ACTIVITY WILL IMPOSE ON THE PREFERRED SITE (IN RESPECT OF THE FINAL SITE LAYOUT PLAN) THROUGH THE LIFE OF THE ACTIVITY	-
J) AN ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK	62
K) WHERE APPLICABLE, A SUMMARY OF THE FINDINGS AND IMPACTS MANAGEMENT MEASURES IDENTIFIED IN AN SPECIALIST REPORT COMPLYING WITH APPENDIX 6 OF THESE REGULATIONS AND AN INDICATION AS TO HOW THESE FINDINGS AND RECOMMENDATIONS HAVE BEEN INCLUDED IN THE FINAL REPORT;	66
L) ENVIRONMENTAL IMPACT STATEMENT	67
M) PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPR	
N) ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION	68
O) DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE	69
P) REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE	
AUTHORISED	69

Q)	CONDITIONS THAT MUST BE INCLUDED IN THE AUTHORISATION	69
R)	UNDERTAKING	70
S)	FINANCIAL PROVISION	71
T)	OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY	72
U)	OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4)(A) AND (B) OF THE ACT.	73
ENVIRO	NMENTAL MANAGEMENT PROGRAMME REPORT	74
A)	DETAILS OF THE EAP	74
B)	DESCRIPTION OF THE ASPECTS OF THE ACTIVITY (74
C)	COMPOSITE MAP	74
D)	DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS	74
E)	IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES	79
F)	IMPACT MANAGEMENT ACTIONS	98
G)	MONITORING OF IMPACT MANAGEMENT ACTIONS	112
H)	MONITORING AND REPORTING FREQUENCY	112
I)	RESPONSIBLE PERSONS	112
J)	TIME PERIOD FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS	112
K)	MECHANISM FOR MONITORING COMPLIANCE	112
L)	CATE THE FREQUENCY OF THE SUBMISSION OF THE PERFORMANCE ASSESSMENT REPORT	114
M)	ENVIRONMENTAL AWARENESS PLAN	114
N)	SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY	114

SCOPING OF ASSESSMENT AND CONTENT OF BASIC ASSESSMENT REPORT

- 1) Contact Person and correspondence address
 - A) DETAILS OF:
 - i) THE EAP WHO PREPARED THE REPORT
 - ii) EXPERTISE OF THE EAP

Name of Practitioner	Qualifications	Contact details
	Honours Degree in Environmental	Tel No.: (018) 011 1925
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Percy Sehaole	Master's Degree in Environmental Science (refer to Appendix 1)	Fax No.: (053) 963 2009
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Danie Labuschagne	Management and Geography (refer to	Fax No. : (053) 963 2009
	Appendix 1)	e-mail address: <u>danie@milnex-sa.co.za</u>

Summary of the EAP's past experience. (Attach the EAP's curriculum vitae as Appendix 2)

Milnex 189 CC was contracted by **Kimswa Mining (Pty) Ltd** as the independent environmental consultant to undertake the BAR and EMPr process for a prospecting right without Bulk Samples for the prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of Portion 2, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province. The property is located in the Hay district of the Northern Cape Province of South Africa approximately 124km southwest of Kimberley. The operations are located on Niewejaarskraal 40 and Viegulands Put 39. Milnex 189 CC does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

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

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

B) DESCRIPTION OF THE PROPERTY.

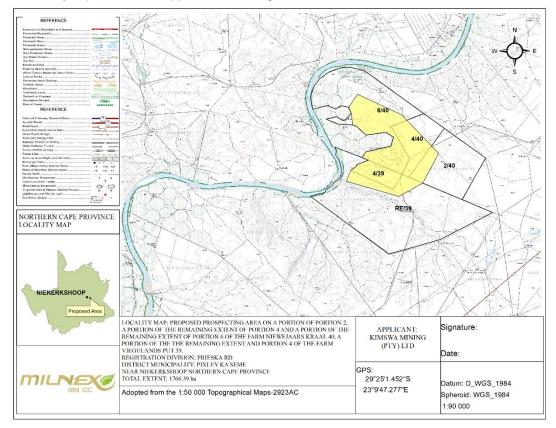
	 A Portion of Portion 2 of the farm Niewejaars Kraal 40 Extent: 996.7805 hectares Title Deed: T20727/1955CTN 		
	 A portion of the remaining extent of Portion 4 of the farm Niewejaars Kraal 40 Extent: 978.9429 hectares Title Deed: T20727/1955CTN 		
FARM NAME:	 A portion of the remaining extent of Portion 6 of the farm Niewejaars Kraal 40 Extent: 1562.0863 hectares Title Deed: T7842/1985CTN 		
	 Portion 4 of the farm Viegulands Put 39 Extent: 244.7542 hectares Title Deed: T51279/2006CTN 		
	 A portion of the remaining extent of the farm Viegulands Put 39 Extent: 3004.7341 hectares Title Deed: T12210/1999CTN 		
APPLICATION AREA (HA)	1766.39 Ha		
MAGISTERIAL DISTRICT:	Pixley Ka Seme District Municipality		
LOCAL MUNICIPALITY	Siyathemba Local Municipality		
REGISTRATION DIVISION	Prieska		
DISTANCE AND DIRECTION FROM NEAREST TOWN	The property is located in the Hay district of the Northern Cape Province of South Africa approximately 124km southwest of Kimberley. The operations are located on Niewejaarskraal 40 and Viegulands Put 39.		
21-DIGIT SURVEYOR GENERAL CODE FOR EACH FARM PORTION	1) C0600000000004000002 2) C060000000004000004 3) C0600000000004000006 4) C060000000003900004 5) C06000000003900000		
MINERALS APPLIED FOR	Diamonds Alluvial (DA) Diamonds General (D) Diamonds in Kimberlite		

III. FARM CO-ORDINATES

Farm	Longitude	Latitude
 A Portion of Portion 2 of the farm Niewejaars Kraal 40 A portion of the remaining extent of Portion 4 of the farm Niewejaars Kraal 40 A portion of the remaining extent of Portion 6 of the farm Niewejaars Kraal 40 A portion 4 of the farm Viewelande Dut 20 	23° 7' 59,196"" E 23° 9' 29,052"" E 23° 10' 44,076"" E 23° 10' 11,748"" E 23° 9' 23,220"" E 23° 7' 36,084"" E 23° 7' 45,408"" E	29° 22' 8,940"" S 29° 22' 50,880"" S 29° 24' 9,000"" S 29° 25' 9,336"" S 29° 25' 36,264"" S 29° 25' 5,592"" S 29° 24' 43,704"" S
4) Portion 4 of the farm Viegulands Put 39	23° 7' 56,244"" E 23° 7' 57,290"" E	29° 24' 35,820"" S 29° 24' 32,370"" S

5)	A portion of the remaining extent of the farm	23° 8' 0,888"" E	29° 24' 30,600"" S
	Viegulands Put 39	23° 8' 21,228"" E	29° 24' 22,860"" S
	Ŭ	23° 8' 8,808"" E	29° 24' 17,640"" S
		23° 8' 16,188"" E	29° 24' 6,048"" S
		23° 9' 7,236"" E	29° 23' 54,204"" S
		23° 9' 12,348"" E	29° 23' 35,952"" S
		23° 8' 56,688"" E	29° 23' 26,340"" S
		23° 8' 16,584"" E	29° 23' 31,956"" S
		23° 7' 57,684"" E	29° 23' 14,388"" S
		23° 7' 49,548"" E	29° 23' 11,508"" S
		23° 7' 46,524"" E	29° 22' 47,748"" S
		23° 7' 41,484"" E	29° 22' 35,400"" S

C) LOCALITY MAP (show nearest town, scale not smaller than 1:250000 attached as Appendix 3).



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

Figure 1: Locality Map

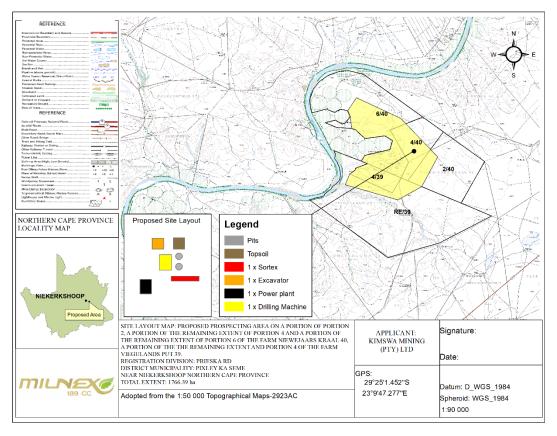


Figure 2: Site Plan Map

D) DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY.

i) LISTED AND SPECIFIED ACTIVITIES

 NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etcetc E.g. for mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etcetc) 	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE (GNR 324, GNR 325 or GNR 327)	WASTEMANAGEMENTAUTHORISATION(Indicatewhetherauthorisation is required in termsof the Waste Management Act).(Mark with an X)
 Prospecting Right without bulk sampling: <u>Drilling</u> 500 boreholes shall be drilled by the appointed contractor. Percussion drilling methods will be used to drill boreholes at varying depths ranging from 90-150m with hole diameters of at least 150mm. <u>Pitting</u> Pits shall be dug, locked, sampled and backfilled 100 pits: 3m (length) x 2m (breath) x 4m (depth). 	1766.39 ha	X	GNR. 327 Activity 20	-
Clearance of indigenous vegetation: Drilling 500 boreholes shall be drilled by the appointed contractor. Percussion drilling methods will be used to drill boreholes at varying depths ranging from 90-150m with hole diameters of at least 150mm. Pitting Pits shall be dug, locked, sampled and backfilled	Disturbance of vegetation while drilling and sampling.	X	GNR. 327 Activity 27	-

100 pits: 3m (length) x 2m (breath) x 4m (depth).		
NEM:WA 59 of 2008		
Residue stockpiles or residue deposits		
Category A: (15) The establishment or reclamation of a residue stockpile or residue deposit resulting		
from activities which require a prospecting right or mining permit, in terms of the Mineral and		
Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).		

Listed activities

Description of the overall activity.	1. Listing Notice GNR 327, Activity 27:"The clearance of an area of 1 hectares or more,
(Indicate Mining Right, Mining Permit,	but less than 20 hectares of indigenous vegetation."
Prospecting right, Bulk Sampling,	
Production Right, Exploration Right,	2. Listing Notice GNR 327, Activity 20: "Any activity including the operation of that activity
Reconnaissance permit, Technical co-	which requires a prospecting right in terms of section 16 of the Mineral and Petroleum
operation permit, Additional listed activity)	Resources Development Act, 2002 (Act No. 28 of 2002), including—
· · · · · · · · · · · · · · · · · · ·	a) associated infrastructure, structures and earthworks, directly related to prospecting
	of a mineral resource[,]; or [including activities for which an exemption has been
	issued in terms of section 106 of the Mineral and Petroleum Resources
	Development Act, 2002 (Act No. 28 of 2002)]
	b) the primary processing of a mineral resource including winning, extraction,
	classifying, concentrating, crushing, screening or washing;
	Prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite
	(DK) without bulk sampling.
	NEM:WA 59 of 2008
	Residue stockpiles or residue deposits
	Category A: (15) The establishment or reclamation of a residue stockpile or residue deposit
	resulting from activities which require a prospecting right or mining permit, in terms of the
	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

ii) DESCRIPTION OF THE ASSOCIATED STRUCTURES AND INFRASTRUCTURE RELATED TO THE DEVELOPMENT

(Describe Methodology or technology to be employed, and for a linear activity, a description of the route of the activity

Kimswa Mining (Pty) Ltd has embarked on a process for applying for a prospecting right without Bulk Samples, for the prospecting of Diamonds Alluvial (DA), Diamonds General (D) and Diamonds in Kimberlite near Niekerkshoop on a portion of Portion 2, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province. These portions are preferred due to the sites expected mineral resources. **Kimswa Mining (Pty) Ltd** requires a prospecting right without bulk sampling in terms of NEMA and the Mineral and Petroleum Resources Development Act to prospect for minerals mentioned above within the Siyathemba Local Municipality, Northern Cape Province (refer to a locality map attached in **Appendix 3**).

Access roads

Access will be obtained from gravel roads off the R357 tar road.

Water Supply

Additional water requirements related to the portable water supply for employees and workers will be supplied.

Water uses

If water uses under section 21 a-k of the NWA are triggered, a Water Use Licence Application (WULA) will need to be lodged with the department of Water & Sanitation (DWS).

Ablution

Chemical toilets shall be used, no french drains and pits shall be permitted.

Storage of dangerous goods

During the prospecting activities, limited quantities of diesel and fuel, oil and lubricants if any will be stored on site. These goods should be placed in a bunded area one and a half times the volume of the total amount of goods to be stored.

Prospecting activities and phases

Please find the Prospecting Work Programme attached as Appendix 8.

List of equipment's & infrastructure

List of equipment
1 x Excavator
1 x Sortex
1 x Power plant
1 x Drilling machine
1 x Drilling machine

(i) **DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:** (These activities do not disturb the land where prospecting will take place e.g. aerial photography, desktop studies, aeromagnetic surveys, etc.).

Phase 1 - Site Visit

The applicant will appoint a geologist to conduct the site visit with him. It is foreseen that more than one site visit will be conducted. The purpose of the site visit shall be to familiarize the parties of the area including the topography and the general geology before invasive prospecting activities shall be commenced with.

During the site visit, the applicant shall assess the roads, the infrastructure that may be used and if it will be necessary to construct any infrastructure needed for the prospecting activities. From a site visit much more details shall be obtained about the process to be followed to properly conduct the prospecting activities than from near desktop studies.

Site visit shall assist the applicant to make a better assessment of the prospecting work to be done during the respective phases where the prospecting work shall be commenced with and what additional equipment may be required to properly conduct the prospecting activities.

The site visit shall also assist the applicant to assess prospecting information of earlier prospecting activities. During this process the applicant shall also review all documentation that has received in relation to the geology of the area.

A site visit will be done within 90 days after the prospecting right was executed.

Phase 2 - Desktop Studie

Desktops studies would be undertaken after the site visit has been done to determine the target areas including the identification of any infrastructure to be built and any potential problems that may need to be addressed during the prospecting activities.

Both these two phases will be Non-Invasive and restricted to a desktop study which will include literature survey, Interpretation of aerial photographs, satellite images and ground validation of targets.

During the desktop studies the applicant with the appointed geologist shall study all available geological information and historical data about the previous prospecting and mining activities.

A preliminary analysis of the operating environment shall be done together with the desktop studies. The desktop studies may improve in project efficiency and reduce the cost by providing a clearer understanding of the challenges the prospecting activities may entail.

The desktop studies shall be finalized by the compilation and the analysis of pre-existing relevant data. The preliminary operating areas shall be identified for these studies. A working document shall be drafted by the geologist after the finalization of the desktop studies.

(ii) **DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:** (These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc.)

Phase 3 - Drilling

The applicant has appointed Tim Tobias Vermaakt-, representative of the mineral consultants and as appointed geologist who will assist with the prospecting activities.

It is estimated that 500 boreholes shall be drilled by the appointed contractor. Percussion drilling methods will be used to drill boreholes at varying depths ranging from 90-150m with hole diameters of at least 150mm. The drilling programme shall be done in accordance with procedures and protocols drawn up by the appointed geologist. Drilling shall be carried out by using a drilling machine. The drill will be under constant observation to determine the depth estimates of the lithological contacts. Each sample shall be logged based upon macroscopic examination of the drill cuttings.

Drilling will commence on the areas that the geologist is of the opinion the geology may prove the presence of diamond bearing indicators. The holes will be drilled on a 100m by 100m grid on the target areas identified during phase 1 and phase 2.

The results shall be noted in a field note book. Observations in the field shall include grainsize, color, degree of roundness (quartzite and chert clasts) and end-of-hole lithology bedrock. These logs will later be summarized and the gravel deposit types will be assigned based upon their stratigraphic and sedimentological characteristics. All drill hole positions will be surveyed and each borehole will be rehabilitated after completion of drilling.

It is estimated that the drilling will take approximately two years after the prospecting right has been executed and the EMP approved.

 Calculation:
 7m x 4 m = 28m²
 (size of area needed for drill rig and related equipment for drilling one borehole.)

 3m x 2.5m = 7.5m²
 (size of area needed for sampling tubes for one borehole.)

 28m² + 7.5m² = 35.5m²
 (sum of the above mentioned.)

 35.5m²/10 000 = 0.00355ha
 0.00355ha x 500 boreholes = 1.775ha

The area to be disturbed will be approximately 1.775ha

Phase 4 - Pitting

Invasive prospecting pits may be dug, depending on the results obtained from the previous phases if deemed necessary by the appointed geologist.

These pits will be positioned as determined by the geologist and after the geologist has assessed information obtained from the earlier prospecting activities.

A trial pit / test pit or inspection pit investigation is a highly effective way of obtaining data on the sub surface soil and rock conditions which underlie a prospecting sight. It allows for the various soils and rock types to be locked, the soil to be sampled and a preliminary assessment to be made.

Pits shall be dug, locked, sampled and backfilled.

To dig the pits, the applicant shall make use of the systems of the appointed geologist.

The applicant shall at the end of the pitting process have locked the pits with the following information:

- A description of the soil and rock types from ground level to the base of the pits;
- Record of rock head depth and refusal depth, a list of where the samples will be taken, a record of where ground water seepage will be recorded;

• A general note of the geologist and conditions in the vicinity of the test pit.

Calculation:

(100 pits / 24 months) x 12 months = 50 pits dug per year Total area to be disturbed per year = 50 pits x $(3m \times 2m) / 10\ 000 = 0.03$ Ha disturbed per year Total area disturbed for 24 months = 100 pits x $(3m \times 2m) / 10\ 000 = 0.06$ Ha disturbed

The area to be disturbed will be approximately 0.06ha

(iii) **DESCRIPTION OF PRE-FEASIBILITY STUDIES** (Activities in this section includes but are not limited to: initial, geological modelling, resource determination, possible future funding models, etc.)

All data will be consolidated and processed to determine the diamond bearing resource on the property. This will be a continuous process throughout the prospecting work program.

E) POLICY AND LEGISLATIVE CONTEXT

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process);	REFERENCE WHERE APPLIED
The Constitution of South Africa (Act No. 108 of 1996)	-
The National Environmental Management Act (Act No. 107 of 1998)	S24(1) of NEMA S28(1) of NEMA
The National Water Act (Act No. 36 of 1998)	S21 of NWA
The National Water Act (Act No. 36 of 1998) GN704 – Regulation on use of water for mining and related activities aimed at the protection of water resources.	
Management: Air Quality Act (Act No. 39 of 2004)	S21
The National Heritage Resources Act (Act No. 25 of 1999)	-
Conservation of Agricultural Resources Act (Act No. 85 of 1983)	-
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	-
National Infrastructure Plan	-
National Forests Acts, Act 84 of 1998	Chap 3 (Part 1) 1998 S12(1) S15(1)
National Veld & Forest Fires Act (Act 101 of 1998)	
Mine, Health and Safety Act 29 of 1996	
National Environmental Management: Waste Act 59 of 2008	
National Environmental Management: Biodiversity Act 10 of 2004	
Pixley Ka Seme District Municipality Integrated Development Plan (IDP)	-
Siyathemba Local Municipality Integrated Development Plan (IDP)	

POLICY AND LEGISLATIVE CONTEXT

Legislation/Policy	Description
The Convention of Biological Diversity (Rio de Janeiro, 1992).	The purpose of the Convention on Biological Diversity is to conserve the variability among living organisms, at all levels (including diversity between species, within species and of ecosystems). Primary objectives include (i) conserving biological diversity, (ii) using biological diversity in a sustainable manner and (iii) sharing the benefits of biological diversity fairly and equitably.
South African Constitution 108 of 1996	The Constitution is the supreme law of the land and includes the Bill of rights which is the cornerstone of democracy in South Africa and enshrines the rights of people in the country. It includes the right to an environment which is not harmful to human health or well-being and to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures.
Strategic Framework for Sustainable Development in South Africa	The development of a broad framework for sustainable development was initiated to provide an overarching and guiding National Sustainable Development Strategy. The Draft Strategic Framework for Sustainable Development (SFSD) in South Africa (September 2006) is a goal orientated policy framework aimed at meeting the Millennium Development Goals. Biodiversity has been identified as one of the key crosscutting trends in the SFSD. The lack of sustainable practices in managing natural resources, climate change effects, loss of habitat and poor land management practices were raised as the main threats to biodiversity.
National Environmental Management Act 107 of 1998	This is a fundamentally important piece of legislation and effectively promotes sustainable development and entrenches principles such as the 'precautionary approach', 'polluter pays' principle, and requires responsibility for impacts to be taken throughout the life cycle of a project NEMA provides the legislative backing (Including Impact Assessment Regulations) for regulating development and ensuring that a risk-averse and cautious approach is taken when making decisions about activities.
Environmental Impact Assessment (EIA) regulations	New regulations have been promulgated in terms of Chapter 5 of NEMA and were published on 08 December 2014 in Government Notice No. R. 985. Development and land use activities which require Environmental Authorisation in terms of the NEMA EIA Regulations, 2014, are in Listing Notice 3 (GG No. R.983, LN3) identified via geographic areas with the intention being that activities only require Environmental Authorisation when located within designated sensitive areas. These sensitive/geographic areas were identified and published for each of the nine (9) Provinces.
National Environmental Management: Biodiversity Act No 10 of 2004	The Biodiversity Act provides listing threatened or protected ecosystems, in one of four categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Protected (Government Gazette, 2011). The main purpose of listing threatened ecosystems is to reduce the rate of ecosystem and species extinction and includes the prevention of further degradation and loss of structure, function and composition of threatened ecosystems.

Conservation of Agricultural Resources Act 43 of 1967	The intention of this Act is to control the over-utilization of South Africa's natural agricultural resources, and to promote the conservation of soil and water resources and natural vegetation. The CARA has categorised a large number of invasive plants together with associated obligations of the land owner, including the requirement to remove categorised invasive plants and taking measures to prevent further spread of alien plants.	
	The protection, sustainable management and use of forests and trees within South Africa are provided for under the National Forests Act (Act 84 of 1998).	
	Prohibition on destruction of trees in natural forests	
	(1) No person may -	
National Forest Act 84 of 1998	(a) cut, disturb, damage or destroy any indigenous tree in a natural forest; or	
	(b) possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any tree, or any forest product derived from a tree contemplated in paragraph (a), except in terms of-	
	(i) a licence issued under subsection (4) or section 23; or	
	(ii) an exemption from the provisions of this subsection published by the Minister in the Gazette on the advice of the Council.	
National Environmental Management: Protected Areas Act 57 of 2003	This Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It also seeks to provide for the sustainable utilization of protected areas and to promote participation of local communities in the management of protected areas.	
Mine, Health and Safety Act 29 of 1996	The Mine Health and Safety Inspectorate was established in terms of the Mine Health and Safety Act, 1996 (Act No. 29 of 1996), as amended, for the purpose of executing the statutory mandate of the Department of Mineral Resources to safeguard the health and safety of mine employees and communities affected by mining operations.	
National Environmental Management: Waste Act 59 of 2008	The Act reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.	

	This Act provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental
National Environmental Management: Biodiversity Act 10 of	Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological
2004	resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; the establishment and
	functions of a South African National Biodiversity Institute; and for matters connected therewith

F) NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.

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

Mining has played a vital role in the economy of South Africa for over 100 years. In 2015 the mining industry contributed R286 billion towards South African Gross Domestic Product (GDP) representing 7.1% of overall GDP.

Mining is a significant contributor to employment in the nation, with 457 698 individuals directly employed by the sector in 2015. This represents just over 3% of all employed nationally. Diamond mining has 17 885 direct employees. (Chamber of Mines, South Africa, 6:2016)

Diamonds, arguably the ultimate luxury mineral, comprise an intricate lattice of carbon atoms, a crystalline structure that makes them harder than any other form in nature. This characteristic makes diamonds not only popular in jewellery, but also desirable in high-tech cutting, grinding and polishing tools. (Chamber of Mines, South Africa, 12:2016)

Prospecting rights and mining permits have been applied for all around the area, and the outcome of that studies suggest the possibility of encountering further diamond deposits.

The Northern Cape Province is an important supplier of rough diamonds to the international market and is a large corner stone of the South African economy.

G) MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT WITHIN THE APPROVED SITE INCLUDING A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED DEVELOPMENT FOOTPRINT WITHIN THE APPROVED SITE.

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

Location of the site

The property is located in the Hay district of the Northern Cape Province of South Africa approximately 124km southwest of Kimberley. The operations are located on Niewejaarskraal 40 and Viegulands Put 39.

Preferred activity

The prospecting of the below mentioned minerals is one of the optimum preferred activities for the site and the other is Game breeding and livestock grazing.

Drilling and pitting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite. The mine will provide additional job opportunities than what is providing currently.

Technology alternatives

In terms of the technologies proposed, these have been chosen based on the long term success of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme (**Appendix 9**) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

H) A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED DEVELOPMENT FOOTPRINT WITHIN THE APPROVED SITE, INCLUDING:

i) DETAILS OF THE DEVELOPMENT FOOTPRINT ALTERNATIVES CONSIDERED;

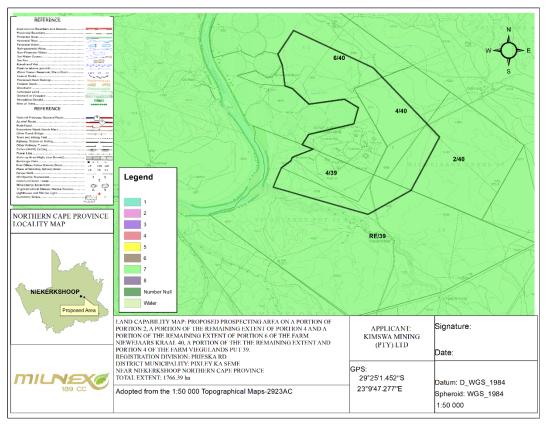
<u>Consideration of alternatives</u>

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

Location alternatives

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. Also, it is expected that the applied for minerals have been deposited on this farm and therefore the applicant would like to commence with their prospecting activities.

Land capability is the combination of soil suitability and climate factors. The proposed development falls within Land in Class 7.



(refer to Land capability map on figure 3 and attached as Appendix 5).

Figure 3: Land Capability Map

<u>Activity alternatives</u>

The environmental impact assessment process also needs to consider if the development of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite, mine would be the most appropriate land use for the particular site.

Prospecting of other commodities – from the surface and desktop assessment there are no indications that there are other commodities to be mined on the site except Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite.

• Design and layout alternatives

The location of activities will be determined based on the location of the prospecting activities, which is outlined on the PWP. All the infrastructure will be temporary and/or mobile.

• **Operational alternatives**

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage services are required.

The objective of the prospecting work programme is to target all minerals in question seams available with a view of increasing the geological confidence factor to assess its bulk sampling potential

<u>No-go alternative</u>

This alternative considers the option of 'do nothing' and maintaining the status quo. The description provided in section H of this report could be considered the baseline conditions (status quo) to persist should the no-go alternative be preferred. Should the proposed activity not proceed, the site will remain unchanged

• <u>Technology alternatives</u>

In terms of the technologies proposed, these have been chosen based on the long term success of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme (**Appendix 9**) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

The preferred technology for the proposed prospecting activity, will be to drill and do pits.

If the grab samples gave interesting results, a drilling program will be better planed in order to have a better knowledge on the deposit(s). Drilling is used to obtain very detailed information about rock types, mineral content, rock fabric and the relationships between rock layers close to the surface and at depth. Drilling is only used in areas that have been selected as "targets" from geological, geophysical and/or geochemical methods.

All geological, geophysical, borehole and mineral recovery data will be modelled to obtain a final interpretation of the potential of the deposit together with the together with the implementation of the surface rehabilitation plan. Please find the Prospecting Work Programme attached as **Appendix 9**.

Reverse Circulation Drilling (RC drilling)

Drill Structure

RC drilling is usually a large piece of apparatus, that requires a lot of space, not just for the rig itself, but the supporting vehicles and the pit for collecting waste runoff.

The drill cutting is transferred to the surface inside drill rods, which are linked together to create a 'drill string'. Drill bits attached to the end of the hammer are made from tungsten-steel, and are usually around 13-20cm in diameter. These also have metal nodules attached at the end to allow cutting through particularly tough rock. Most RC drilling uses a dual-tube drill rods, with one tube inside another. The tubes inside overlap and provide a path for drilled rock from the ground to the surface. Inner tubes can be sealed together, meaning that the RC drill can sample up to very large depths, often around 500m.

Another type of RC drilling is 'centre sample' drilling. This is a modern variation, in which a central hammer, with a hollow centre, allows the sample to immediately enter the drill pipe, without the need to travel past the hammer (AZOMining, 2012)

Sample Extraction

The samples produced from RC drilling are dry chips of the drilled rock. To create the sample, the hammer acts like a pneumatic piston and pushes a tungsten-steel drill bit on to the rock, breaking it up. Before the drill bit hits the rock, it is dried out using an air compressor, so that the rock chips are dry at the surface.

Water is often used down the hole to cool the drill bit and reduce dust, as well as assisting with the transportation of sample bits to the surface. Air is blown down the drill rods to create a pressure difference, allowing the sample chips and water to rise through the inner tube. The sample then reaches a bell at ground level, which transports the sample to a cyclone where it dries out and is deposited into sacks (AZOMining, 2012).

Applications

RC drilling is a technique used in most stages of mine development.

As it is cheaper than diamond core drilling, it is often used in first stage exploration mining to delineate a potentially extractable ore body. It is also preferable to RAB or air-core drilling when trying to reach great depths, but RC drilling is slower and more expensive than either of these two methods.

RC drilling is also consistently used during in-pit grade control and the development stage of an ore body (AZOMining, 2012).

Advantages	Disadvantages		
Direct drilling cost reductions in the range of 25% to 40%.	Less geological information from sample.		
Faster completion of drill programs with quicker delivery of	Holes can deviate (Spiral Stabiliser Subs keep holes		
results.	straighter)		
Reduced man-hours at the drill with decreased exposure to	Diamond drill can usually drill to greater depth although		
potential accidents.	depths up to 800m have been achieved with.		
Reduced contractor activity in the mine reduces mine support			
burden.			
Indirect cost reductions gained from a simplified sampling			
process.			

Pros & Cons of the alternative RC drilling

Diamond Core Drilling

Diamond drilling allows the removal of solid cylinders of rock (core) from deep within the earth.

Drill Structure

Diamond core drilling is so called because it uses a 'diamond bit'. This drill bit is composed of group of small, industrial grade diamonds set into a metallic, soft matrix. As the ground is drilled, this matrix will wear away and expose more diamonds.

This is then attached to a drill rod, which is around 10 foot in length, and then more sections of pipe can be attached to the top of this, so a greater depth can be drilled. The depth that is drilled to is estimated by the number of rods attached to the top of the drill rod.

Inside the drill rod, a core tube is attached to a cable via a latching mechanism. The core tube is lifted to the surface using the cable, so the solid core can be removed.

There are two primary types of diamond drilling-rotary drilling and wineline drilling. Rotary drilling is used primarily for bore hole drilling, whereas wineline drilling is used for solid core sampling.

There a five standard tube sizes associated with wire line drilling. These are as follows:

- AQ (Hole diameter: 48mm)
- BQ (60mm)
- NQ (75.5mm)
- HQ (96mm)
- PQ (122.6mm)

The drill size used depends on the desired core diameter and the desired depth of drilling, and the wider the diameter of the tube, the more power that is required to drive the drilling (AZOMining, 2012).

Core Extraction

To extract core, the drill rod rotates the diamond bit, spinning it into the ground. As the drill bit bores through the rock, solid rock is taken into the circular opening at the end of the bit, into the core tube, and can then be recovered at the surface as it piles up. Once the core is recovered at the surface it is broken along natural fractures and stored in core trays to await analysis. A standard core tray can hold around 10 feet of core.

For optimum core extraction, the driller must listen to the drill to evaluate subsurface conditions. To keep drilling efficient, the rotation speed, pressure and water circulation must be strictly monitored.

Sometimes when drilling in highly fractured zones, overheating can occur due to a stuck bit. This issue is usually counteracted by the injection of mud or sawdust to plug fractures in the rock.

Application

Diamond core finds its primary function in the exploration mining sector. It is usually one of the last stages of exploration, during which the orebody is delineated in three dimensions. This will determine whether the prospect is economically viable. Using a diamond drill rig, long vertical sections of core can be extracted from deep in the ground, which can then be analysed at the surface by geologists.

The core can then be analysed using a wide range of petrologic, structural and mineralogical techniques to determine whether the potential mining site is economically viable.

Extracted core is first washed and macroscopic features are logged by an exploration geologist. The core is then cut and representative samples are sent for chemical analysis (AZOMining, 2012).

Advantages	Disadvantages
Highly accurate cutting	Drill bits are often not very big and they are mostly able to
	cut through only stone, rock and cement.
A reduced risk of inadvertently causing structural damage	There is a powerful kick back from the machinery so caution
A reduced lisk of madvertently causing structural damage	needs to be applied when using diamond core drilling.
	While dust will not accumulate in large quantities some dust
Less debris is produced	is likely to go into the drilling machine which can have an
	effect on its functioning and effectiveness.
Suitable for just about any working environment	
Very little noise and no dust	
Equipment is lightweight and portable	

Pros & Cons of the alternative Diamond Core Drilling

Can be done remotely which limits the safety hazards.	
Drill to great depth	

According to the PWP Diamond drilling will be done to test the conductors and soil geochemical anomalies.

When it comes to dust suppression two main methods were considered, namely molasses stillage and the wetting (water) of roads. The table below provides a short summary of the advantages and disadvantages of each.

Water	Molasses stillage
More cost effective	Much more expensive
Could lead to the depleting of water resources	Requires less water
No damage (only if used excessively)	The product may be toxic to aquatic organisms. (As this
	product could have physical effects on aquatic organisms for
	e.g. floating, osmotic damage)
No harm to humans or animals(Only a high quantity will	Not Hazardous or toxic.
have harm to humans or animals)	Could cause irritation to eyes, skin or when ingested and
	inhaled.
Non-flammable	Non-flammable
Eye-wash fountains not needed	Eye-wash fountains in the work place are strongly
	recommended
	Working procedures should be designed to minimize worker
	exposure to this product.
Basic storing methods	Storing methods are a bit more complicated. Should be stored
	in a plastic, plastic lined or stainless steel, tight closed
	containers between 5 and 40 degrees Centigrade.

Considering the above mentioned information, water will be used for dust suppression purposes.

ii) DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

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

Advertisement and Notices

1. Newspaper advertisement

An advertisement was placed in English in the local newspaper (**Noordkaap**) on **7 November 2018** (see **Appendix 6**) notifying the public of the EIA process and requesting Interested and Affected Parties (I&APs) to register with, and submit their comments to Milnex 189 CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement.

2. Site notices

Site notices was placed (as anticipated on the coordinates below) on site in English on **1 November 2018** to inform surrounding communities and immediately adjacent landowners of the proposed development. I&APs will be given the opportunity to raise comments. Photographic evidence of the site notices will be included in **Appendix 6**. Below are the coordinates where the site notices were placed.



Figure 4: Site notice co-ordinates

3. Direct notification and circulation of Basic Assessment Report to identified I&APs

Identified I&APs, including key stakeholders representing various sectors, are directly informed of the proposed development and the availability of the **Basic Assessment Report** via registered post on **25 October 2018** and were requested to submit comments by **26 November 2018**. A copy of the report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Friday. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**. The consultees included:

- Northern Cape Department of Environmental Affairs and Nature Conservation (DENC)
- Department of Water & Sanitation, Upington (DWS)
- Department of Mineral Resources (DMR)
- NC Department of Agriculture, Forestry and Fisheries (DAFF)
- Department of Agriculture, Forestry and Fisheries (DAFF)
- Northern Cape Department of Agriculture, Land Reform & Rural Development
- Department of Public Works, Roads and Transport in NC (DPWRT)
- Wildlife and Environment Society of South Africa (WESSA)
- Pixley Ka Seme District Municipality
- Municipal Manager at the Siyathemba Local Municipality
- Local Councilor at the Siyathemba Local Municipality

It is expected from I&APs to provide their inputs and comments within 30 days after receipt of the notification or Basic Assessment Report. When the comment period ends, all comments received will be included in the final Basic Assessment Report & EMP Report.

4. Direct notification of surrounding land owners and occupiers

Written notices and the availability of the Basic Assessment Report are also provided to all surrounding land owners and occupiers on **25 October 2018**. The surrounding land owners were given the opportunity to raise comments by **26 November 2018**. For a list of surrounding land owners see **Appendix 6**.

5. <u>Consultation</u>

The Public Meeting was scheduled for **20 November 2018** at 13:00pm – 14:00am 50km from Prieska on the R357 at the Kalkkrantz turnoff, at the coordinates mentioned below. The coordinates and directions (figure5) of the public meeting follows below.

Coordinates 29°31'9.41"S 23° 9'42.62"E

Directions to Public Meeting

- In Prieska head towards Douglas on the R357.
- Drive for 50km on the R357 until reaching the Kalkkrantz turnoff.
- Milnex personnel will be waiting here



Figure 5: Directions to the public meeting

The public meeting is an opportunity to share information regarding the proposed development and provide I&APs with an opportunity to raise any issues and provide comments. The following key stakeholders and surrounding land owners were also directly informed of the public meeting via registered post **25 October 2018**.

Stakeholders	Land owners	Surrounding Land owner
Northern Cape Department of Environmental	Redivivus Louw	Redivivus Louw
Affairs and Nature Conservation (DENC)	Reddie Louw	
Department of Water & Sanitation, Upington (DWS)	Trans Hex Bedrywe Pty Ltd	Hendrik Jacobus Burger
	Nuwejaarskraal Testamentere Trust	. .
Department of Mineral Resources (DMR)	Leonard Louw	Stedela Pty Ltd
NC Department of Agriculture, Forestry and		Stefanus Abraham Cilliers
Fisheries (DAFF)		Stelands Abraham Onners
Department of Agriculture, Forestry and		Cornelius Jacobus Coetzee
Fisheries (DAFF)		

Northern Cape Department of Agriculture, Land Reform & Rural Development	JWC Trust
Department of Public Works, Roads and Transport in NC (DPWRT)	Louw Johan-Trustees
Wildlife and Environment Society of South Africa (WESSA)	
Pixley Ka Seme District Municipality	
Municipal Manager at the Siyathemba Local Municipality	
Local Councilor at the Siyathemba Local Municipality	

Table 1: List of Stakeholders, Land owners, & surrounding land owners

6. Public Meeting

Please note that the Stakeholders & Interested and Affected Parties were informed about the proposed project with the use of press advertisement and registered letters.

Milnex representative Mr. Mandi Sibanyoni attended the meeting. None of the surrounding land owners, I&AP or stakeholders attended the meeting.

7. Issues Raised by Interested and Affected Parties

When the comment period ends, comments received will be included in the comments and response table/form (See Appendix 6 for comments and response form).

iii) SUMMARY OF ISSUES RAISED BY I&APS

(Complete the table summarising comments and issues raised, and reaction to those responses)

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issue and or response where
Organisation	Contact person			incorporated
Land Owner				
Niewejaars Kraal 4/40 2/40	Redivivus Louw	No comments received		
& Viegulands Put Re/39	Reddie Louw			
Viegulands Put 4/39	Trans Hex Bedrywe Pty Ltd	No comments received		
Niewejaars Kraal 6/40	Duncan & Rothman Nuwejaarskraal Testamentere Trust Leonard Louw	 Fax received on 20/12/2018. The letter received from Duncan & Rothman is in Afrikaans and had to be translated. Milnex will not be held liable for any mistakes and/or errors that might have arised from the translation of the relevant documents. Please note that the original letter is attached under Appendix 6. The letter was in Afrikaans and states the following: We act upon this on behalf of the Nuwejaarskraal Testamentere Trust which, under Deed of Transfer number T7842 / 1985, is the registered owner of the Remaining Extent of Portion 6 of the farm Nijejaars Kraal number 40, District Prieska Our client has handed us your notice dated 19 November 2018 It is our instruction to report to you as follows: Kimswa Mining did not consult with our client at any stage. 	Email sent 25/01/2019 with PWP and DMR acknowledgment letter attached.	

		 required by the relevant legislation to which you refer in your notice. 3.3. The notice contains insufficient information to consider our client in a position regarding your client's application for granting a prospecting right. 3.4. The notice continually refers to Kimswa's intention to apply for the granting of a prospecting right. As you are aware, prospecting is limited to activities aimed at determining the appearance of a mineral resource while mining is aimed at mining a mineral. In the meantime, please provide us with the applicant's Prospecting Work program. 3.5. The relevant property is high potential agricultural land. The relevant property is extensively used to cultivate high quality agricultural crops under irrigation as well as for the breeding of game. The property should therefore be protected at all costs in order not to damage and limit its agricultural potential 3.6. If it is Kimswa's intention to carry out the proposed activities on the existing historic mining area, then in such case we require that you explicitly state it in the application document that the operations will be limited to the existing historical mining area 4. We would also appreciate it if you would make available to us the acceptance of Kimswa's application by the Regional Manager of the Department of Mineral Resources.
Surrounding Land Owners Niewejaars Kraal 1/40		
Kalk Krans 5/41 4/41 2/41	Redivivus Louw	No comments received
Viegulands Put 3/39	Hendrik Jacobus Burger	No comments received
Lanyon Vale 18/376	Stedela Pty Ltd	No comments received
Lanyon Vale 6/376	Stefanus Abraham Cilliers	No comments received
Lanyon Vale 7/376	Cornelius Jacobus Coetzee	No comments received
Lanyon Vale 11/376	JWC Trust	No comments received
Kalk Krans 1/41	Louw Johan-Trustees	No comments received

			-	
Niewejaars Kraal 9/40	not on search works	No comments received		
Niewejaars Kraal 8/40	not on search works	No comments received		
Niewejaars Kraal 7/40	not on search works	No comments received		
The Municipality in which ju	urisdiction the development is loo	cated		
Siyathemba Local Municipality	Municipal Manager: Mr I W G Stadhouer	No comments received		
Municipal councilor of the w	ward in which the site is located			
Siyathemba Local Municipality	Ward 4 Councillor	No comments received		
Organs of state having juris	sdiction			
Northern Cape Department of Environmental Affairs and Nature Conservation (DENC)	Mrs. Doreen Werth	No comments received		
	Kgaudi Shapo	Acknowledgment letter received on 11/10/2018		
DMR Department of Mineral Resources, Northern Cape.		Email received 02/11/2018 which states the email was forwarded to the relevant official.	Email sent 01/11/2018 with letter attached which states that Milnex 189 CC would like to amend the application to exclude the areas which overlap with the existing right. The area will be reduced from 6787.30 ha to 1766.39 ha.	
(DMR)		Email received 02/11/2018 which states the following:		
		Noted, this file is still with our spatial office for spatial verification, we will be guided by the spatial report in consultation with this letter.		
The Department of Water & Sanitation (DWS)	Mr. G. van Dyk	No comments received		
NC Department of	To whom it may concern	No comments received		
Agriculture, Forestry and	Chief forester Mrs. J. Mans	No comments received		
Fisheries (DAFF)	Mr. Harm Vorster	No comments received		

Northern Cape Department of Agriculture, Land Reform & Rural Development	Mr. W.J.J. de Bruyn	No comments received		
Department of Roads and Public Works (DRPW)	HOD: Ms. Ruth Palm Mr Tshiamo Pitso	No comments received		
Northern Cape Department of Rural Development & Land Reform,	Nqabisa Mkalipi	Email received 30/11/2018 with letter attached which states the following: The department confirm that as at the date of this letter no land claims appear on our database in respect of the property. This include the database for claims lodged by 31 December 1998; and those lodged between 1 July 2014 and 27 July 2016 in terms of the Restitution of Land Rights Amendment Act, 2014.	Email sent 29/11/2018 is proof of land claims consultation.	
Other-				
Pixley Ka Seme District Municipality	Municipal Manager: Mr Rodney Pieterse	No comments received		
WESSA (National Office)	To whom it may concern	No comments received		
Tenant on the property of Landowner 1	Dirk Loots	Email received 28/11/2018 was in Afrikaans and had to be translated. Milnex will not be held liable for any mistakes and/or errors that might have arised from the translation of the relevant documents. Please note that the original letter is attached under Appendix 6. The email states the following: My trust is the landowner of Zwemkuil no. 37 portion 0 and portion 2. I am the landowner of Smitskloof no. 38. We will be affected by the application because Smitskloof borders Viegulandsput and on the other side Zwemkuil portion 0 borders Blaauwbosdraai of Mr van Niekerk and Mrs. Muller.		

I am renting the farm Kalkkrantz from Lolita Groenewald, actually from her father Mr Redi Louw's estate. I am also renting the farm Viegulandsput from the late Mr Redi Louw's estate.	
The public dirt road runs through Smitskloof, Viegulandsput, Kalkkrantz and portion 1 from Zwemkuil no. 37. The traffic on the road will increase a lot and the dust problem with it. I have previously brought it to your attention that I will not grant permission to provide water over my land to those who wish to prospect. (whether by road or by pipeline).	

iv) THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE SITES

Baseline Environment

The baseline environment is described with specific reference to geotechnical conditions, ecological habitat and landscape features, soil, land capability and agricultural potential, climate and the visual landscape.

Camel Thorn tree & Shepherd tree

Camel Thorn trees & Shepherd trees may be found on the proposed area. Such trees amongst others are **protected tree species** under the National Forests Act No. 84 of 1998 are listed in Table 4.9. In terms of a part of section 51(1) of Act No. 84 of 1998, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a license granted by the Minister.

In cases where the trees will need to be cut, disturbed, damaged or destroyed or possessed, collected, removed, transported, exported, purchased, sold or donated a flora permit mustl be applied for.

Type of environment affected by the proposed activity.

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

Geology and Soils

Karoo Supergroup

Dwyka Group (C-Pd – Tillite, sandstone, mudstone and shale)

Classification

The Dwyka Group forms the lowermost and oldest deposit in the Karoo Supergroup basin. This basin extended across much of southern Gondwana and records 120 million years of geological history.

Permo-carboniferous glacially-related sediments of the Dwyka Group underlie the thin, superficial cover of Gordonia sands, calcrete and Late Cenozoic alluvium. The Dwyka tillite is mostly a very fine-grained, blue-grey rock comprised of clay matrix with inclusions (or clasts) of many other fragments picked up by glaciers during their travels.

Ecological habitat and landscape features

Vegetation

The result obtained by plotting the coordinates are as follow:

The proposed area falls within vegetation unit NKu 3 and Aza 4 which is known as the Northern Upper Karoo and Upper Gariep Alluvial Vegetation. The Northern Upper Karoo is part of the Upper Karoo Bioregion, which is a sub-bioregion for the Nama-Karoo Biome. The Upper Gariep Alluvial Vegetation is part of the Alluvial Vegetation Bioregion which is a sub-bioregion for the Inland Azonal Vegetation.

Northern Upper Karoo

According to Mucina and Rutherford (2006:340), the Northern Upper Karoo vegetation covers the Northern Cape and Free State Provinces which include the Northern regions of the Upper Karoo plateau from Prieska, Vosburg and Carnarvon in the west to Philipstown, Petrusville and Petrusburg in the east. Bordered in the north by Niekerkshoop, Douglas and Petrusburg and in the south by Carnarvon, Pampoenpoort and De Aar. A few Patches occur in Griqualand West. It is situated on an altitude of 1000m – 1500m.

The shrubland area is dominated by dwarf karoo shrubs, grasses and *Anacia mellifera* subsp. detinens and some other low trees (especially on sandy soils in the northern parts and vicinity of the Orange River). Flat to gently sloping, with isolated hills of Upper Karoo Hardeveld in the south and Vaalbos Rocky Shrubland in the northeast and with many interspersed pans.

Mucina and Rutherford (2006:340) also states that the conservation of the Northern Upper Karoo, is Least Threatened with a target of 21%. About 4% has been cleared for cultivation (the highest proportion of any type in the Nama-Karoo) or irreversibly transformed by building of dams (Houwater, Kalkfontein and Smart Syndicate Dams). Areas of human settlements are increasing in the north-eastern part of this vegetation types. Erosion is moderate at 46.2%, very low at 32% and low at 20%. According to Hoffman *et al.* (1999) as stated by Mucina and Rutherford (2006:340) *Prosopis* occurs in generally isolated patches, with densities ranging from very scattered to medium (associated with the lower Vaal River drainage system and the confluences with the Orange River) to localised closed woodland on the western borders of the unit with Bushmanland Basin Shrubland.

Upper Gariep Alluvial Vegetation

According to Mucina and Rutherford (2006:639), the Upper Gariep Alluvial Vegetation covers the Free State and Northern Cape Province: Broad alluvia of the Orange River, lower Caledon as well as lower stretches of the Vaal, Riet and Modder rivers as far as Groblershoop. These river stretches are surrounded by vegetation units of broad transitional regions between the dry facies of the Savanna and Grassland and northern regions of the Nama-Karoo Biome. Altitude ranging from 1000 – 1500m.

The area has flat alluvial terraces supporting complex of riparian thickets (gallery forests) dominated by native Acacia karroo and Diospyros lycioides, flooded grasslands, reed beds and ephemeral herblands populating mainly sand banks within the river and on its banks

Upper Gariep Alluvial Vegetation has a conservation which is vulnerable with a target of 31%. Only about 3% statutorily conserved in Tussen Die Riviere, Gariep Dam and Oviston Nature Reserve. More than 20% transformation for cultivation (vegetable grapes) and building of dams. Exotic woody species such as Salix babylonica, Eucalyptus camaldulensis, E. sideroxylon, Prosopis and Populus species have become common dominants in patches of heavily disturbed alluvial vegetation (Mucina and Rutherford, 2006:639-640).

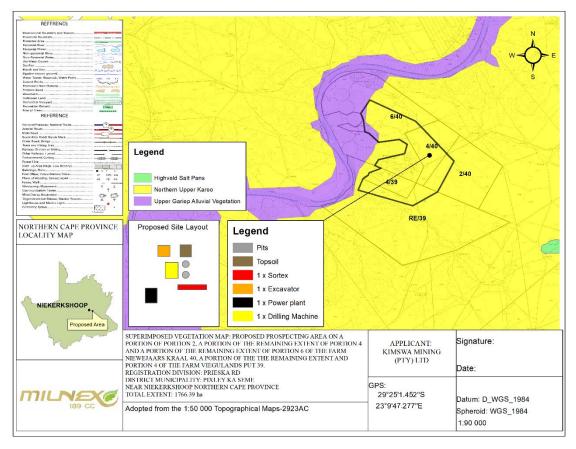


Figure 8: Vegetation Unit Map

Protected Areas

According to the data for protected areas, the proposed area does not fall within a Formally Protected Area, nor a Threatened Ecosystem.

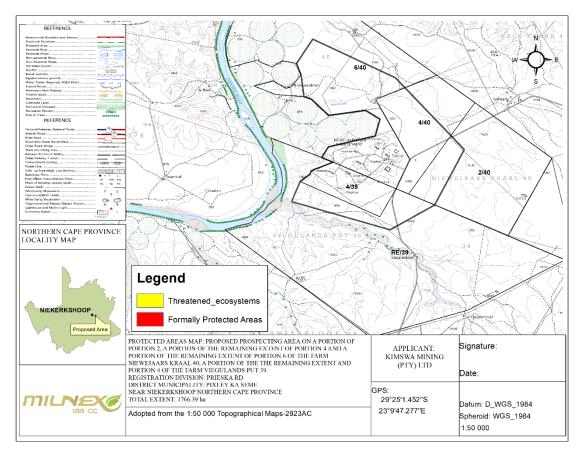


Figure 9: Protected Area map

Critical Biodiversity Area

According to the data for Critical Biodiversity Areas, the proposed area falls within Critical Biodiversity Area One, Critical Biodiversity Area Two and Other Natural Areas.

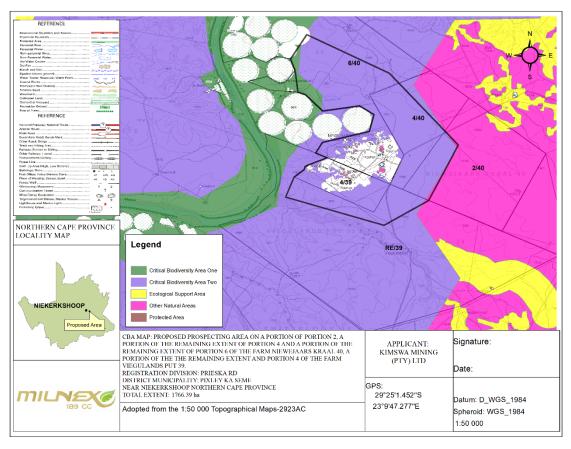


Figure 10: Critical Biodiversity Areas Map.

Sensitive area for Mine

According to the Mining of Biodiversity Guidelines, biodiversity priority areas sensitive to the impacts of mining are categorized into four categories (please see the table below).

Category	Description
A	Legally protected
В	Highest biodiversity importance
C	High biodiversity importance
D	Moderate biodiversity importance

The purpose is to identify and categorize biodiversity priority areas sensitive to the impacts of mining in order to support mainstreaming of biodiversity issues in decision making in the mining sector.

According to the mine guide map, a certain area of the proposed area falls within category B. The biodiversity priority areas are as follows:

Highest biodiversity importance (B)

These areas are viewed as necessary to ensure protection of biodiversity, environmental sustainability, and human well-being. The Biodiversity priority areas is as follows:

• Critically endangered and endangered ecosystems

- Critical Biodiversity Areas (or equivalent areas) from provincial spatial biodiversity plans
- River and wetland Freshwater Ecosystem Priority Areas (FEPAs), and a 1km buffer around these FEPAs
- Ramsar Sites

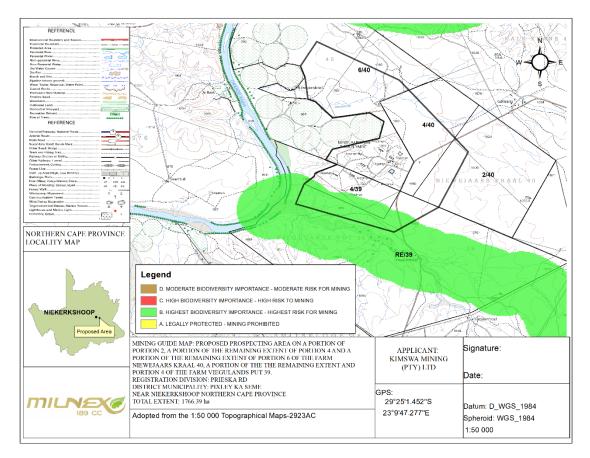


Figure 11: Sensitive area for mine

Wetland Areas

Wetland is defined as land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil (from the South African National Water Act; Act No. 36 of 1998).

The maps below depict all wetland areas on the proposed portion. According to the map there are no wetland on the proposed area. The wetland vegetation type falls within the Upper Nama Karoo.

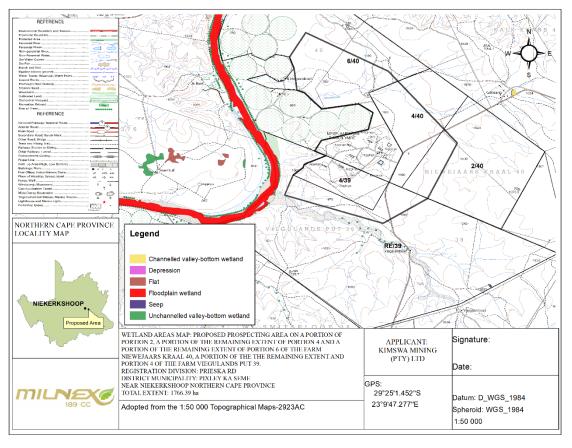


Figure 12: Wetland types present on site

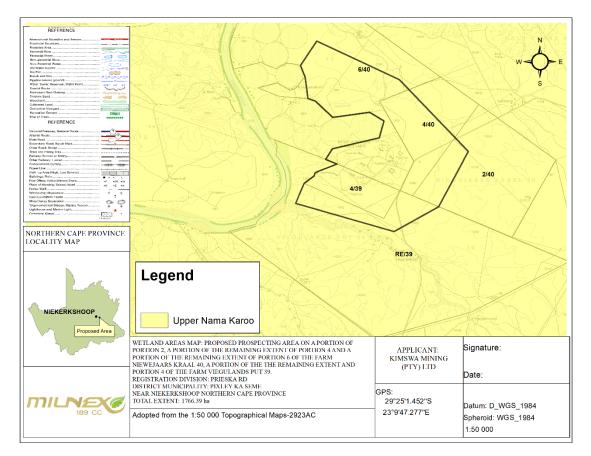


Figure 13: Wetland vegetation type

River Ecosystem Status

The status of the river in question is Moderately Modified (Class C) in this area. The figure below depicts the river ecosystem status.

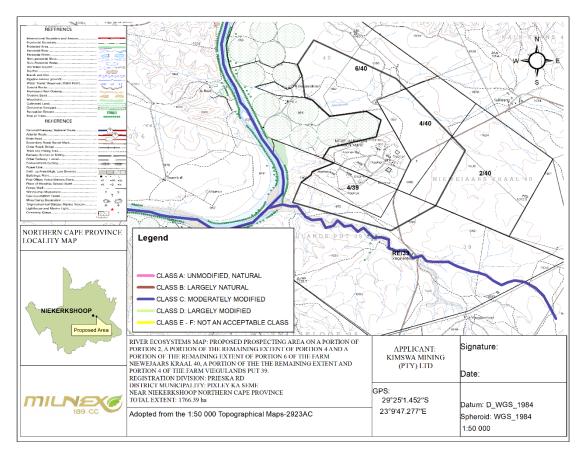
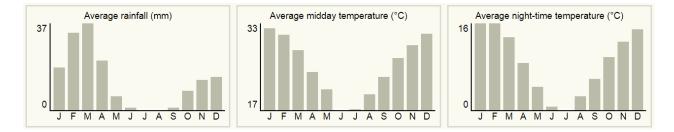


Figure 14: River Ecosystem Status

Land capability and agricultural potential

Climate and water availability

Niekerkshoop normally receives about 152mm of rain per year, with most rainfall occurring mainly during autumn. The chart below (lower left) shows the average rainfall values for Niekerkshoop per month. It receives the lowest rainfall (0mm) in July and the highest (37mm) in March. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Niekerkshoop range from 17°C in June to 32°C in January. The region is the coldest during July when the mercury drops to 0.3°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures (SAExplorer, 2014).



Description of the socio-economic environment

The municipality has relatively high levels of basic services, partially integrated society, medical facilities in Douglas and Griekwastad, one of the biggest correctional services in the province and is the neighbour to Kimberley, the provincial and legislative capital of the province. It still has major inequalities to overcome and in common with the rest of the country, a skew and sluggish economy to transform and speed up. Economy

The following economic sectors that contributed the most to the DRSMDM Gross Domestic Product (GDP):

- Community services (33.1%),
- Agriculture (17.1%)
- Finance 16.2%
- Trade (12.7%),
- Transport (9%),
- Manufacturing (4%)
- Mining (3.2%),
- Construction (3.2%)

Cultural and heritage aspects

Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected by the National Heritage Resources Act no 25 of 1999. Therefore, if such resources are found during the prospecting or development activities, they shall not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA must be contacted immediately and work must stop.

Description of the current land uses.

Topographical map & google earth revealed that land uses on and in the immediate vicinity of the proposed development are essentially comprised of natural vegetation, cultivation, mines and waterbodies.

Below is the land cover of the proposed area which consist largely of natural cover and mines.

According to landowner 3, his portion is used for game breeding and there are historical mining activities present on his portion.

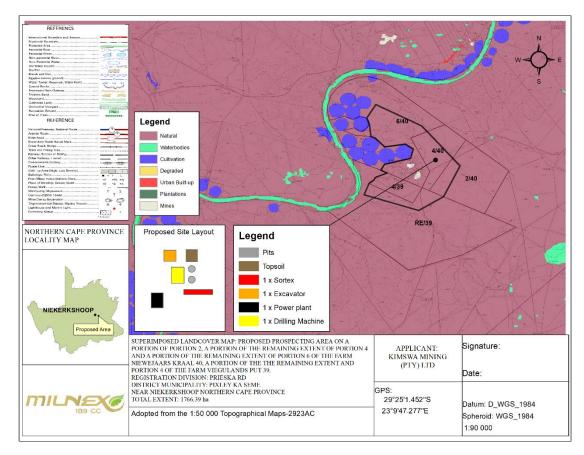


Figure 12: Land cover

v) IMPACTS AND RISKS IDENTIFIED INCLUDING THE NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT, DURATION AND PROBABILITY OF THE IMPACTS, INCLUDING THE DEGREE TO WHICH THESE IMPACTS

(aa) can be reversed;(bb) may cause irreplaceable loss of resources; and(cc) can be avoided, managed or mitigated;

Significance of potential impacts

The following sections present the outcome of the significance rating exercise. The results suggest that the prospecting activities will have an impact on the natural vegetation and the agricultural activities, if not properly mitigated.

INITIAL CLEARANCE AND SITE PREPARATION PHASE

Direct impacts: During this phase minor negative impacts are foreseen over the short term. The latter refers to a period of weeks. The site preparation may result in the loss or fragmentation of indigenous natural fauna and flora, loss or fragmentation of habitats, soil erosion, hydrology, and temporary noise disturbance, generation of waste, visual intrusions, increase in heavy vehicle traffic, and risk to safety, livestock and farm infrastructure, and increased risk of veld fires. The abovementioned impacts are discussed in more detail below:

Loss, destruction or fragmentation of indigenous natural fauna and flora:

The proposed area falls within vegetation unit NKu 3 and Aza 4 which is known as the Northern Upper Karoo and Upper Gariep Alluvial Vegetation. The Northern Upper Karoo is part of the Upper Karoo Bioregion, which is a sub-bioregion for the Nama-Karoo Biome. The Upper Gariep Alluvial Vegetation is part of the Alluvial Vegetation Bioregion which is a sub-bioregion for the Inland Azonal Vegetation.

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Loss or fragmentation of indigenous natural fauna and flora	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (1)	Local (1)
Probability	Definite (4)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Medium cumulative impacts (2)	
Significance	Negative low (26)	Negative low (10)

 Loss destruction or fragmentation of habitats – It is noted that the proposed prospecting site is mostly covered in natural vegetation and mining activities. Faunal species will primarily be affected by the overall loss of habitat.

Loss or fragmentation of habitats	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (2)
Duration	Short term (1)	Short term (1)
Magnitude	Medium (2)	Medium (2)

Reversibility	Partly reversible (2)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Low cumulative impacts (2)	
Significance	Negative low (20)	Negative low (18)
Can impacts be mitigated?	Exotic and invasive plant species sho development is approved. Where ex found at the site continuous erac development is approved, every effi- footprint to the blocks allocated for de also provides numerous mitigation me	otic and invasive plant species are ication should take place. If the ort should be made to confine the evelopment – section (f) of the EMPr

Loss of topsoil –Topsoil may be lost due to poor topsoil management (burial, erosion, etc.). The effect will be the loss of soil fertility
on disturbed areas after rehabilitation. This will result in grazing and cultivation potential being lost.

Loss of topsoil	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Geographical extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (1)
Duration	Short term (1)	Short term (1)
Magnitude	Medium (2)	Medium (2)
Reversibility	Partly reversible (2)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	No loss of resource (1)
Cumulative impact	Medium cumulative impacts (2)	
Significance	Negative low (20)	Negative low (14)
Can impacts be mitigated?	 then any available topsoil shi surface and stockpiled for reference of an error of the error of the	ly disturb below surface in any way, ould first be stripped from the entire -spreading during rehabilitation. conserved against losses through tation cover on them. bils from excavations where they will nd. stockpiled topsoil must be evenly bed surface. where necessary on top soiled areas. If g system for each area where soil is boses. These records should be ance reports, and should include all s of each area. ripping. s of where the topsoil is stockpiled. on of constructional (or operational) e. station of constructional activities. -spreading of topsoil. mpletion of rehabilitation and on an show vegetation establishment and

topsoil management.	Section (f) of the EMPr also provide mitigation measures related to
	topsoil management.

 <u>Soil erosion</u> – Soil erosion due to alteration of the land surface run-off characteristics. Alteration of run-off characteristics may be caused by construction related land surface disturbance, vegetation removal and the establishment of roads. Erosion will cause loss and deterioration of soil resources. This will result in grazing and cultivation potential being lost.

Soil erosion Pre-mitigation impact Pc		Post mitigation impact
	rating	rating
Status (positive or negative)	Negative	Negative
Geographical extent	Site (1)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Short term (1)
Magnitude	Medium (2)	Low (1)
Reversibility	Party reversible (2)	Party reversable (2)
Irreplaceable loss of resources	Marginal (2)	Marginal (2)
Cumulative impact	Medium cumulative impact (2).	
Significance	Negative low (22)	Negative low (9)
Can impacts be mitigated?	 The following mitigation or management measures are provided: Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion. Monitor the area regularly after larger rainfall events to determine where erosion may be initiated and then mitigate by modifying the soil micro-topography and revegetation or soil erosion control efforts accordingly. 	
	Include periodical site inspection in environmental performant reporting that inspects the effectiveness of the run-off cont system and specifically records the occurrence any erosion on st or downstream – refer to section (f) of the EMPr	

<u>Temporary noise disturbance</u> - Preparation activities will result in the generation of noise over a period of months. Sources of noise are likely to include vehicles, the use of machinery such as back actors and people working on the site. The noise impact is unlikely to be significant; but activities should be limited to normal working days and hours (6:00 – 18:00).

Temporary noise disturbance	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Possible (2)
Duration	Short term (1)	Short term (1)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Low cumulative impact (2).	
Significance	Negative low (20)	Negative low (9)
Can impacts be mitigated?	Yes, management actions related to noise pollution are included in section (f) of the EMPr.	

<u>Generation of waste - general waste, construction waste, sewage and grey water</u> - The workers on site are likely to generate general waste such as food wastes, packaging, bottles, etc. The applicant will need to ensure that general waste is appropriately

disposed of i.e. taken to the nearest licensed landfill. Sufficient ablution facilities will have to be provided, in the form of portable/VIP toilets. No pit latrines, French drain systems or soak away systems shall be allowed.

Generation of waste	Pre-mitigation impact rating	Post mitigation impact rating		
Status (positive or negative)	Negative	Negative		
Extent	Local/district (2)	Local/district (2)		
Probability	Probable (3)	Possible (2)		
Duration	Medium term (1)	Medium term (1)		
Magnitude	Low (1)	Low (1)		
Reversibility	Partly reversible (2)	Partly reversible (2)		
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)		
Cumulative impact	Low cumulative impact (2) - An a	Low cumulative impact (2) - An additional demand for landfill space		
	could result in significant cumu	could result in significant cumulative impacts if services become		
	unstable or unavailable, which i	unstable or unavailable, which in turn would negatively impact on		
	the local community. If general	the local community. If general waste is left on site livestock coul		
	mistakenly eat it, which might in	mistakenly eat it, which might in turn harm or kill them.		
Significance	Negative low (11)	Negative low (10)		
Can impacts be mitigated?	itigated? Yes, it is therefore important that all management a			
mitigation measures included in se		in section (f) of the EMPr are		
	implemented.			

<u>Impacts on heritage objects</u> – Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected by the National Heritage Resources Act no 25 of 1999. Therefore, if such resources are found during the prospecting or development activities, they shall not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA must be contacted immediately and work must stop.

Impacts on heritage objects	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Possible (2)
Duration	Short term (1)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Irreversible (4)	Irreversible (4)
Irreplaceable loss of resources	Significant loss of resources (3)	No loss of resource (1)
Cumulative impact	The impact would result in negligible to no cumulative effects (1).	
Significance	Negative medium (39)	Negative low (22)
Can impacts be mitigated?	If archaeological sites or graves are exposed during construction work, it	
	should immediately be reported to a heritage practitioner so that an	
	investigation and evaluation of the finds can be made. Also refer to section	
	(f) of the EMPr.	

Indirect impacts: The nuisance aspects generally associated with the installation of infrastructure or ground preparation will also be applicable to this development, which relates primarily to the increase in vehicle traffic associated with prospecting practices, the influx of job seekers to the area, risk to safety, livestock and farm infrastructure, and increased risk of veld fires.

Increase in vehicle traffic – The movement of heavy vehicles have the potential to damage local farm roads and create dust
and safety impacts for other road users in the area. Since the application is for a prospecting right without bulk sampling, only
drilling and pitting will take place. Access will be obtained from a gravel roads off the R357. The volume of traffic along this
road is low and the movement of heavy vehicles along this road is likely to damage the road surface and impact on other road
users.

Increase in vehicle traffic	Pre-mitigation impact rating	Post mitigation impact rating	
Status (positive or negative)	Negative	Negative	
Extent	Local (2)	Local (2)	
Probability	Possible (2)	Unlikely (1)	
Duration	Medium term (2)	Medium term (2)	
Magnitude	Medium (2)	Low (1)	
Reversibility	Completely reversible (1)	Completely reversible (1)	
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)	
Cumulative impact	Low cumulative impact (2). If damage to roads is not repaired, then this will affect the farming activities in the area and result in higher maintenance costs for vehicles of local farmers and other road users. The costs will be borne by road users who were no responsible for the damage.		
Significance	•	Negative low impacts (20) Negative low (9)	
Can impacts be mitigated?	 The potential impacts associated with he mitigated. The mitigation measures include The contractor must ensure that dat the off-gravel roads. The costs ass borne by the contractor; Dust suppression measures must be such as wetting of gravel roads on a vehicles used to transport sand and tarpaulins or covers; All vehicles must be road-worthy at made aware of the potential road s speed limits. 	e: mage caused by construction on sociated with the repair must be e implemented for heavy vehicles a regular basis and ensuring that building materials are fitted with nd drivers must be qualified and	
	Also refer section (f) of the EMPr. For mitig	pation measures related to traffic.	

• <u>Risk to safety, livestock and farm infrastructure</u> - The presence on and movement of workers on and off the site poses a potential safety threat to local famer's, farm workers and the communities in the vicinity of the site. In addition, farm infrastructure, such as fences and gates, may be damaged and stock losses may also result from gates being left open and/or fences being damaged or stock theft linked either directly or indirectly to the presence of farm workers on the site.

Risk to safety, livestock and farm infrastructure	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	No loss of resource (1)
Cumulative impact	Low cumulative effects (2), provided losses are compensated for.	
Significance	Negative low (22)	Negative low (8)
Can impacts be mitigated?	Key mitigation measures include:	
	Kimswa Mining (Pty) Ltd should enter into an agreement with the local farmers in the area whereby damages to farm property et during the construction phase will be compensated for. The second s	

agreement should be signed before the construction phase
commences;
The construction area should be fenced off prior to the commencement of the construction phase. The movement of
construction workers on the site should be confined to the fenced off area;
Contractors appointed by Kimswa Mining (Pty) Ltd should provide daily transport for low and semi-skilled workers to and from
the site. This would reduce the potential risk of trespassing on the remainder of the farm and adjacent properties;
Kimswa Mining (Pty) Ltd should hold contractors liable for
compensating farmers in full for any stock losses and/or damage
to farm infrastructure that can be linked to construction workers.
This should be contained in the Code of Conduct to be signed
between the proponent, the contractors and neighbouring
landowners. The agreement should also cover loses and costs
associated with fires caused by construction workers or construction related activities (see below);
The Environmental Management Programme (EMPr) should
outline procedures for managing and storing waste on site,
specifically plastic waste that poses a threat to livestock if ingested;
Contractors appointed Kimswa Mining (Pty) Ltd must ensure that
all workers are informed at the outset of the construction phase of
the conditions contained on the Code of Conduct, specifically
consequences of stock theft and trespassing on adjacent farms.
Contractors appointed by Kimswa Mining (Pty) Ltd must ensure
that construction workers who are found guilty of trespassing, stealing livestock and/or damaging farm infrastructure are
dismissed and charged. This should be contained in the Code of
Conduct. All dismissals must be in accordance with South African
labour legislation;
The housing of construction workers on the site should be strictly limited to security personnel (if any).

Increased risk of veld fires - The presence of construction workers and construction-related activities on the site poses an
increased risk of grass fires that could in turn pose a threat to livestock, crops, wildlife, farmsteads and the communities in the
area. In the process, infrastructure may also be damaged or destroyed and human lives threatened. The potential risk of grass
fires was heightened by the windy conditions in the area, especially during the dry, windy winter months from May to October.
Fire-fighting equipment should be provided on site during the construction phase.

Increased risk of veld fires	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Region (3)	Local (2)
Probability	Probable (3)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Very high (4)	Low (1)
Reversibility	Partly reversible (2)	Completely reversible (1)
Irreplaceable loss of resources	Significant loss of resource (3)	Marginal loss of resource (2)
Cumulative impact	Negligible cumulative effects (1), provided losses are compensated for.	
Significance	Negative high (56)	Negative low (10)
Can impacts be mitigated?	The mitigation measures include:	

•	A fire-break should be constructed around the perimeter of the site prior
	to the commencement of the construction phase;
•	Contractor should ensure that open fires on the site for cooking or
	heating are not allowed except in designated areas;
•	Contractor to ensure that construction related activities that pose a
	potential fire risk, such as welding, are properly managed and are
	confined to areas where the risk of fires has been reduced. Measures
	to reduce the risk of fires include avoiding working in high wind
	conditions when the risk of fires is greater. In this regard special care
	should be taken during the high risk dry, windy winter months;
•	Contractor to provide adequate firefighting equipment on-site, including
	a fire fighting vehicle;
•	Contractor to provide fire-fighting training to selected construction staff;
•	No construction staff, with the exception of security staff, to be
	accommodated on site over night;
•	As per the conditions of the Code of Conduct, in the advent of a fire
	being caused by construction workers and or construction activities,
	the appointed contractors must compensate farmers for any damage
	caused to their farms. The contractor should also compensate the
	firefighting costs borne by farmers and local authorities.

OPERATIONAL PHASE

Direct impacts: During the operational phase the study area will serve as a prospecting area and the impacts are generally associated with soil erosion, change in land use, impacts associated with the, increase in storm water runoff, increased consumption of water, visual intrusion, the generation of general waste, leakage of hazardous materials, and the change in the sense of place. The operational phase will also have a direct positive impact through the provision of permanent employment opportunities and facilitating a positive economic growth. The abovementioned impacts are discussed in more detail below:

 <u>Soil erosion</u> – There is a low to no risk factor for soil erosion for drilling and pitting sampling activities. The conditions of the EMP will be adhered to throughout the prospecting operation and commitment to rehabilitation is of paramount importance in order to obtain a closure certificate from DMR.

Soil erosion	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Low (1)
Reversibility	Partly reversible (2)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	No loss of resource (1)
Cumulative impact	Low cumulative effects (2), should the	ese impacts occur, there will be a
	cumulative impact on the air and water resources in the study area in terms	
	of pollution.	
Significance	Negative Low (24)	Negative Low (8)
Can impacts be mitigated?	Yes, to avoid soil erosion it will be a good practice to not remove all the	
	vegetation at once but to only clear the area as it becomes necessary and to	
	implement concurrent rehabilitation.	
	The following mitigation or mail	nagement measures are provided:
	Implement an effective system of ru	in-off control, where it is required, that

 collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion. Monitor the area regularly after larger rainfall events to determine where erosion may be initiated and then mitigate by modifying the soil microtopography and revegetation or soil erosion control efforts accordingly
Also refer to section (f) of the EMPr.

• <u>Change in land-use</u> – The proposed area will still be used for Game breeding and livestock grazing.

Change in land use	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Low cumulative effects (2)	
Significance	Negative low (11)	Negative low (11)
Can impacts be mitigated?	The proponent should establish a Rehabilitation Fund to be used to rehabilitate the area once the proposed facility has been decommissioned. The fund should be funded by revenue generated during the operational phase of the project. The motivation for the establishment of a Rehabilitation Fund is based on the experience in the mining sector where many mines on closure have not set aside sufficient funds for closure and decommissioning.	
	Also refer to section (f) of the EMPr.	

 <u>Generation of alternative land use income</u> – Income generated through the potential prospecting of the minerals applied for will provide the farming enterprise with increased cash flow and rural livelihood, and thereby improve the financial sustainability of farming on site.

Generation of alternative land use income	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Positive	Positive
Geographical extent	Site (1)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	Medium (2)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resources (1)	No loss of resources (1)
Cumulative impact	Low cumulative impact (2).	•
Significance	Positive Low (24)	Positive Low (26)
Can impacts be mitigated?	No mitigation required.	•

Increase in storm water runoff – The development will potentially result in an increase in storm water run-off that needs to be
managed to prevent soil erosion, especially where vegetation will be cleared. Not all the vegetation should be removed at
once. Only the specific pits being excavated at the specific time should be cleared.

Increase in storm water runoff	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal loss of resource (2)	No loss of resource (1)
Cumulative impact	Low cumulative impact (2) - Should these impacts occur, there will be	
	cumulative impacts on the wider area.	
Significance	Negative low (22)	Negative low (9)
Can impacts be mitigated?	Yes. It is therefore important that all management actions and mitigation	
	measures included in section (f) of the EMPr. are implemented to ensure	
	that these impacts do not occur	

• <u>Increased consumption of water</u> – Additional water requirements related to the portable water supply for employees and workers. Water will also be used for dust suppression.

Increased consumption of water	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Definite (4)	Definite (4)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Medium (2)
Reversibility	Irreversible (4)	Irreversible (4)
Irreplaceable loss of resources	Marginal loss of resources (2)	Marginal loss of resources (2)
Cumulative impact	Medium cumulative impacts (3) - An additional demand on water sources could	
	result in a significant cumulative impact	with regards to the availability of water.
Significance	Negative medium (32)	Negative medium (32)
Can impacts be mitigated?	Yes, management actions and mitigation measures related to the use of water are	
	included in section (f) of the EMPr.	

 <u>Generation of waste</u> –Workers will be present on site from 6:00 – 18:00, Monday to Saturday. Sources of general waste will be waste food, packaging, paper, etc. General waste will be stored on the site and removed on a weekly basis.

Generation of waste	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Medium cumulative impact (3) - An additional demand for landfill space could	
	result in significant cumulative impacts with regards to the availability of	
	landfill space. If general waste is left on site livestock could mistakenly eat it,	
	which might in turn harm or kill them.	
Significance	Negative low (14)	Negative low (14)
Can impacts be mitigated?	Yes, management actions related to waste management are included in	
	section (f) of the EMPr.	

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

Leakage of hazardous materials	Pre-mitigation impact rating	Post mitigation impact rating	
Status (positive or negative)	Negative	Negative	
Extent	Site (1)	Site (1)	
Probability	Possible (2)	Unlikely (1)	
Duration	Medium term (2)	Medium term (2)	
Magnitude	Medium (2)	Medium (2)	
Reversibility	Partly reversible (2)	Completely reversible (1)	
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)	
Cumulative impact	The impact would result in negligible t	The impact would result in negligible to no cumulative effects (1)	
Significance	Negative low (20)	Negative low (16)	
Can impacts be mitigated?	Yes. It is therefore important that a	Yes. It is therefore important that all management actions and mitigation	
	measures included in the section (f) of EMPr are implemented to ensure that		
	these impacts do not occur.		

 <u>Noise disturbance</u> - Prospecting activities will result in the generation of noise over a period of 2-3 years. Sources of noise are likely to include vehicles, the use of machinery such as drills and people working on the site; but prospecting activities should be limited to normal working days and some Saturdays and hours (6:00 – 18:00).

Temporary noise disturbance	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Definite (4)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Medium (2)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	The impact would result in negligible to no cumulative effects (1).	
Significance	Negative low (22)	Negative low (18)
Can impacts be mitigated?	Yes, management actions related to noise pollution are included in section (f) of the EMPr.	

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

Potential impact on tourism – There are no tourist facilities in close proximity to the proposed area.

Potential impacts on tourism	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Unlikely (1)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)

Irreplaceable loss of resources	N/A	N/A
Cumulative impact	N/A	
Significance	Negative low (6)	Negative low (6)
Can impacts be mitigated?	No mitigation required	

DECOMMISIONING PHASE (MINE CLOSURE AND REHABILITATION)

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

 <u>Rehabilitation of the physical environment</u> – The physical environment will benefit from the closure of the prospecting area. There is a slight chance to restore the site to its natural state, however rehabilitation will be done concurrently with all activities

Rehabilitation of the physical environment	Pre-mitigation impact rating	Post mitigation impact rating			
Status (positive or negative)	Positive	Positive			
Extent	Site (1)	Site (1)			
Probability	Definite (4)	Definite (4)			
Duration	Long term (3)	Long term (3)			
Magnitude	High (3)	High (3) N/A			
Reversibility	N/A				
Irreplaceable loss of resources	N/A	N/A			
Cumulative impact	The impact would result in negligible to no cumulative effe				
Significance	Positive low (27)	Positive low (27)			
Can impacts be mitigated?	No mitigation measures required.				

Loss of employment - The decommissioning of the facility has the potential to have a negative social impact on the local community.

Loss of employment	Pre-mitigation impact rating	Post mitigation impact rating			
Status (positive or negative)	Negative	Negative			
Extent	Local (2)	Local (2)			
Probability	Possible (2)	Possible (2)			
Duration	Medium term (2)	Medium term (1)			
Magnitude	Medium (2)	Medium (2)			
Reversibility	Partly reversible (2)	Partly reversible (2)			
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)			
Cumulative impact	The impact would result in negligible to no cumulative effects (1)				
Significance	Negative low (20)	Negative low (18)			
Can impacts be mitigated?	 All structures and infrastructure associated with the proposed facility should be dismantled and transported off-site or decommissioning; Kimswa Mining (Pty) Ltd should establish an Environmental Rehabilitation Trust Fund to cover the costs of decommissioning and rehabilitation of disturbed areas. 				

Indirect impacts: No indirect impacts are anticipated from the decommissioning phase of the proposed development.

vi) METHODOLOGY USED IN DETERMINING AND RANKING THE NATURE, SIGNIFICANCE, CONSEQUENCES, EXTENT, DURATION AND PROBABILITY OF POTENTIAL ENVIRONMENTAL IMPACTS AND RISKS

Method of environmental assessment

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

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

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

Impact Rating System

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

- Construction
- Operation
- Decommissioning

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

Table: The rating system

	NATURE							
	Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.							
		GEOGRAPHICAL EXTENT						
This is	defined as the area over which the ir	npact will be experienced.						
1	Site	The impact will only affect the site.						
2	Local/district	Will affect the local area or district.						
3	Province/region	Will affect the entire province or region.						
4	International and National	Will affect the entire country.						
	PROBABILITY							
This d	This describes the chance of occurrence of an impact.							

1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
		DURATION
This de	escribes the duration of the impact	s. Duration indicates the lifetime of the impact as a result of the proposed activity.
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase $(0 - 1 \text{ years})$, or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated $(0 - 2 \text{ years})$.
2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated
3	Long term	by direct human action or by natural processes thereafter (2 – 10 years). The impact and its effects will continue or last for the entire operational life of the development,
3		but will be mitigated by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process
		will not occur in such a way or such a time span that the impact can be considered indefinite.
		INTENSITY/ MAGNITUDE
Descri	bes the severity of an impact.	
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/ component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
		REVERSIBILITY
This de	escribes the degree to which an im	pact can be successfully reversed upon completion of the proposed activity.
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
		The impact is irreversible and no mitigation measures exist.
4	Irreversible	
4	Irreversible	IRREPLACEABLE LOSS OF RESOURCES

2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
		CUMULATIVE EFFECT
		impacts. A cumulative impact is an effect which in itself may not be significant but may become ntial impacts emanating from other similar or diverse activities as a result of the project activity in
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
		SIGNIFICANCE
of both ph uses the f	ysical extent and time scale, and the oblight of the scale, and the oblight of the scale, and the oblight of the scale, and th	sis of impact characteristics. Significance is an indication of the importance of the impact in terms herefore indicates the level of mitigation required. The calculation of the significance of an impact eability + duration + cumulative effect) x magnitude/intensity.
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vii) THE POSITIVE AND NEGATIVE IMPACTS THAT THE PROPOSED ACTIVITY (IN TERMS OF THE INITIAL SITE LAYOUT) AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY THAT MAY BE AFFECTED.

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

- Increased ambient noise levels resulting from geophysic surveys site fly-overs and increased traffic movement during all
 prospecting phases.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on environmental resources utilized by communities, landowners and other stakeholders.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on ecosystem functioning.
- Potential decrease in water levels due to abstraction.
- Increased vehicle activity with in the area resulting in the possible destruction and disturbance of fauna and flora.
- Poor access control to farms which may impact on livestock movement, breeding and grazing practices.
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.
- Potential visual impacts caused by prospecting activities.
- Prospecting will be undertaken by specialist sub contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.
- Prospecting activities may result in localised visual impacts.

viii) THE POSSIBLE MITIGATION MEASURES THAT COULD BE APPLIED AND THE LEVEL OF RISK.

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

Negative impacts on vegetation, soil and the water resources associated with the prospecting activity have been identified through the BAR & EMPr process. Mitigation measures as set out in the Environmental Management Programme (EMPr) attached in Part B must be implemented in order to minimise these potential impacts.

Noise

Site activities must take place during the day (06:00 – 18:00) to avoid night time noise disturbances and night time collisions with fauna.

Visual impact

Dust suppression measures must be implemented.

Soil

- Disturbances to soil should be limited as far as possible.
- Erosion control measures should be implemented if necessary.
- Oils and lubricants must be stored in lined containment structures.
- Drip trays should be used where necessary.
- Waste bins should be provided and waste should be removed and disposed of at a licensed landfill site.
- Rehabilitation should be done concurrently.

Water

- Before any water is abstracted, a geo-hydro study should be conducted in order to determine the specific yield.
- Oils and lubricants must be stored in lined containment structures.
- Drip trays should be used where necessary.
- Erosion control measures should be implemented if necessary.

ix) MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED.

As discussed in the previous section, the possibility to encounter further Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of Portion 2, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province, was identified.

x) STATEMENT MOTIVATING THE ALTERNATIVE DEVELOPMENT LOCATION WITHIN THE OVERALL SITE. (Provide a statement motivating the final site layout that is proposed)

The site is preferred due to its possibility of having Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite the property is also only suitable for potential grazing, due to the climate conditions.

I) FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS AND RISKS THE ACTIVITY WILL IMPOSE ON THE PREFERRED SITE (IN RESPECT OF THE FINAL SITE LAYOUT PLAN) THROUGH THE LIFE OF THE ACTIVITY.

i. A description of all environmental issues and risks that are identified during the environmental impact assessment process

Process for the identification of key issues

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

- <u>Checklist</u>: The checklist consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts.
- <u>Matrix</u>: The matrix analysis provides a holistic indication of the relationship and interaction between the various activities, development phases and the impact thereof on the environment. The method aims at providing a first order cause and effect relationship between the environment and the proposed activity. The matrix is designed to indicate the relationship between the different stressors and receptors which leads to specific impacts. The matrix also indicates the specialist studies, which will be submitted as part of the Environmental Impact Report in order to address the potentially most significant impacts.

Checklist analysis

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

Table: Environmental checklist

Question	YES	NO	Un- sure	Description
1. Are any of the following located on the site earmarker	d for the	e develo)
I. A river, stream, dam or wetland	×			According to the topographical map there are non-perennial water, a Reservoir and Jakkalsloop on the proposed area.
II. A conservation or open space area		×		None.
III. An area that is of cultural importance			×	
IV. Site of geological significance			×	
V. Areas of outstanding natural beauty		×		None
VI. Highly productive agricultural land		×		The proposed area falls within land capability Class 7. Which means soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.
VII. Floodplain		×		None
VIII. Indigenous forest			×	
IX. Grass land			×	
X. Bird nesting sites			×	
XI. Red data species			×	
XII. Tourist resort		×		None.
2. Will the project potentially result in potential?				
I. Removal of people		×		None.
II. Visual Impacts	×			The visual impact will be managed.
III. Noise pollution	×			Activities are only carried out during the day no activity is done at night due to noise levels which may affect surrounding infrastructure and people.
IV. Construction of an access road		×		Access will be obtained from the gravel road off the R357.
V. Risk to human or valuable ecosystems due to explosion/fire/ discharge of waste into water or air.		×		
VI. Accumulation of large workforce (>50 manual workers) into the site.		×		Employment opportunities will be created during the different phase of the project.
VII. Utilisation of significant volumes of local raw materials such as water, wood etc.		×		Additional water requirements related to the portable water supply for employees, workers, to keep the drill cool and dust suppression.
VIII. Job creation	×			Employment opportunities will be created during the different phase of the project.
IX. Traffic generation		×		None.
X. Soil erosion		×		The application is for a prospecting right without bulk sampling, only drilling and pitting will take place.
XI. Installation of additional bulk telecommunication transmission lines or facilities		×		None.
3. Is the proposed project located near the following?)		•	

I. A river, stream, dam or wetland	×			According to the topographical map there are non-perennial rivers, Dry water courses and the Orange river near the proposed area. The River Ecosystems map states that the river is Moderately modified and according to the Wetland Areas map there is a Floodplain wetland near the proposed area.
II. A conservation or open space area		×		None
III. An area that is of cultural importance			×	
IV. A site of geological significance			×	
V. An area of outstanding natural beauty		×		
VI. Highly productive agricultural land	×			The area around the proposed area falls within land capability 7. However, there are central pivot irrigation systems adjacent the proposed area.
VII. A tourist resort		×		None
VIII. A formal or informal settlement		×		None

Matrix analysis

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

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

- Stressor: Indicates the aspect of the proposed activity, which initiates and cause impacts on elements of the environment.
- **Receptor**: Highlights the recipient and most important components of the environment affected by the stressor.
- Impacts: Indicates the net result of the cause-effect between the stressor and receptor.
- Mitigation: Impacts need to be mitigated to minimise the effect on the environment.

Milnex 189 CC: BAR129 – BAR & EMPr: Prospecting Right without Bulk Samples for the prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of Portion 2, a portion of the Remaining Extent of Portion 2, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 2, a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province.

J) AN ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK

LISTED ACTIVITY	ASPECTS OF THE DEVELOPMENT				ANCE AND M DTENTIAL IM		MITIGATION OF POTENTIAL IMPACTS	SPECIALIST STUDIES /	
(The Stressor)	ACTIVITY	Receptors		Impact description	Minor	Major	Duration	Possible Mitigation	INFORMATION
CONSTRUCTION PHASE	•				<u>.</u>	•	<u>.</u>	2	
Listing Notice GNR 327, Activity 27:"The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation."	Site clearing and preparation Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately.		Fauna & Flora	 Loss or fragmentation of indigenous natural vegetation. Loss of sensitive species. Loss or fragmentation of habitats. 	-		М	Yes	-
			Air	Air and dust pollution due to the increase of traffic of construction vehicles.	-		S	Yes	-
		BIOPHYSICAL ENVIRONMENT	Soil	 Soil degradation, including erosion. Loss of topsoil. Disturbance of soils and existing land use (soil compaction). 	-		S	Yes	-
		ICAL ENV	Geology	It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.	N/A	N/A	N/A	N/A	-
		BIOPHYSIC	Existing services infrastructure	 Generation of waste that need to be accommodated at a licensed landfill site. Generation of sewage that need to be accommodated by the local sewage plant. 	_		S	Yes	-
			Ground water	Pollution due to construction vehicles.	-		S	Yes	-
			Surface water	 Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (pans/dams/streams). 	-		S	Yes	-
		AENT	Local unemployment rate	Job creation.Business opportunities.Skills development.	+		S	Yes	-
			Visual landscape	 Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility. 	-		S	Yes	-
		VIRON	Traffic volumes	Increase in construction vehicles.	-		S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Health & Safety	 Air/dust pollution. Road safety. Increased risk of veld fires. 	-		S	Yes	-
			Noise levels	• The generation of noise as a result of construction vehicles, the use of machinery such as drills, excavators and people working on the site.	-		S	Yes	_
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the construction activities will not have an impact on tourism in the area.		N/A	N/A	N/A	-

Milnex 189 CC: BAR129 – BAR & EMPr: Prospecting Right without Bulk Samples for the prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 5 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province.

			Heritage resources	 Removal or destruction of archaeological and/or paleontological sites. Removal or destruction of buildings, structures, places and equipment of cultural significance. Removal or destruction of graves, cemeteries and burial grounds. 	-		S	Yes	-
Listing Notice GNR 327, Activity 27:"The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation."	Site clearing and preparation Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately. This will inevitably result in the removal of indigenous		Fauna & Flora	 Loss or fragmentation of indigenous natural vegetation. Loss of sensitive species. Loss or fragmentation of habitats. 	-		м	Yes	-
	vegetation located on the site.		Air quality	• Air and dust pollution due to the increase of traffic.	-		М	Yes	-
		ONMENT	Soil	 Soil degradation, including erosion. Disturbance of soils and existing land use (soil compaction). Loss of agricultural potential (low significance relative to agricultural potential of the site). 	-		м	Yes	-
		BIOPHYSICAL ENVIRONMENT	Geology	• It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.	-		L	Yes	-
		BIOPHYSIC	Existing services infrastructure	 Generation of waste that need to be accommodated at a licensed landfill site. Generation of sewage that need to be accommodated by the local sewage plant. 	-		м	Yes	-
			Ground water	Pollution due to construction vehiclesPollution due to blasting	-		S	Yes	-
			Surface water	 Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (pans/dams/streams). 	-		м	Yes	-
			Local unemployment rate	Job creation.Skills development.	+		S	N/A	-
		SOCIAL/ECONOMIC ENVIRONMENT	Visual landscape	Potential visual impact on visual receptors in close proximity to proposed facility.	-		М	Yes	-
		OMIC ENV	Traffic volumes	Increase in construction vehicles.	-		S	Yes	-
		AL/ECONC	Health & Safety	Air/dust pollution.Road safety.	-		s	Yes	-
		SOCIA	Noise levels	• The generation of noise as a result of construction vehicles, and people working on the site.	-		s	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the construction activities will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	 Removal or destruction of archaeological and/or paleontological sites. Removal or destruction of buildings, structures, places and equipment of cultural significance. Removal or destruction of graves, cemeteries and burial grounds. 	-		S	Yes	-

Milnex 189 CC: BAR129 – BAR & EMPr: Prospecting Right without Bulk Samples for the prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 5 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province.

OPERATIONAL PHASE											
Listing Notice GNR 327, Activity	The key components of the proposed project are		Fauna & Flora	Fragmentation of habitats.							
27:"The clearance of an area of 1	described below:			• Establishment and spread of declared weeds and alien		-	S	Yes	-		
hectare or more, but less than 20				invader plants (operations).							
hectares of indigenous vegetation."			Air quality	Air cluster due to the mining activity exchanging the second							
	Supporting Infrastructure - A control facility with			 Air pollution due to the mining activity, crusher plant, transport 	-		М	Yes	-		
Listing Notice GNR 327, Activity	basic services such as water and electricity will			of the gravel to the designated areas and possible blasting.							
20: "Any activity including the	be constructed on the site and will have an		Soil	 Soil degradation, including erosion. 							
operation of that activity which	approximate footprint 50m ² or less. Other			• Disturbance of soils and existing land use (soil compaction).			м	Yes			
requires a prospecting right in terms	supporting infrastructure includes a site office			· Loss of agricultural potential (low significance relative to	-		IVI	res	-		
of section 16 of the Mineral and	and workshop area.			agricultural potential of the site).							
Petroleum Resources Development			Geology	Collapsible soil.							
Act, 2002 (Act No. 28 of 2002),	 <u>Roads</u> – Access will be obtained from the gravel 			 Seepage (shallow water table). 							
including—	road off the R357.			Active soil (high soil heave).							
				Erodible soil.							
NEM:WA 59 of 2008				 The presence of undermined ground. 							
Residue stockpiles or residue	• <u>Fencing</u> - For health, safety and security reasons,	Ч		 Instability due to soluble rock. 	-		L	Yes	-		
deposits	the facility will be required to be fenced off from	ENVIRONMENT		 Steep slopes or areas of unstable natural slopes. 							
	the surrounding farm.	NO		 Areas subject to seismic activity. 							
Category A: (15) The establishment		VIR		 Areas subject to seismic activity. Areas subject to flooding. 							
or reclamation of a residue stockpile		EN									
or residue deposit resulting from		BIOPHYSICAL	Evisting consists	Blasting							
activities which require a prospecting		YSI0	Existing services								
right or mining permit, in terms of the		РН	infrastructure	Generation of waste that need to be accommodated at a							
Mineral and Petroleum Resources		BIO		licensed landfill site.				N N			
Development Act, 2002 (Act No. 28				Generation of sewage that need to be accommodated by the	-		М	Yes	-		
of 2002).				municipal sewerage system and the local sewage plant.							
				Increased consumption of water.							
			Ground water	- Lookage of hererdeus metericle. The mechinery on site							
				 Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and 							
					fuels can contaminate water supplies.	-		L	Yes	-	
				 Pollution due to blasting 							
				Ç							
			Surface water	Increase in storm water runoff. The development will							
				potentially result in an increase in storm water run-off that							
				needs to be managed to prevent soil erosion.				N			
				Destruction of watercourses (pans/dams/streams).	-		L	Yes	-		
				• Leakage of hazardous materials. The machinery on site							
				require oils and fuel to function. Leakage of these oils and							
				fuels can contaminate water supplies.							
		Þ	Local	Skills development.	+		L	Yes	-		
		MEN	unemployment rate								
		NO	Visual landscape	• The proposed portions are used for Game breeding and							
		VIR		livestock grazing which will still take place simultaneously with	-		L	Yes	-		
		ĒN		the prospecting activity, however this depends on the location							
	In USCIALECONOMIC ENVIRONMENT		of the activity.								
		Traffic volumes				_					
			Increase in vehicles collecting gravel for distribution.			S	Yes	-			
		VL/E	Hoalth & Cofety								
		CIA	Health & Safety	Air/dust pollution.			S	Yes			
		SC		Road safety.	-		3	163	-		
L			I								

		Noise levels	The proposed development will result in noise pollution during the operational phase.	-		М	Yes	-
		Tourism industry	 Since there are no tourism facilities in close proximity to the site, the operational activities will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-
		Heritage resources	 It is not foreseen that the proposed activity will impact on heritage resources or vice versa. 	-		S	Yes	-
			DECOMMISSIONING PHASE			<u> </u>		<u> </u>
- <u>Mine closure</u> During the mine closure the Mine and its associated		Fauna & Flora	• Re-vegetation of exposed soil surfaces to ensure no erosion in these areas.	+		L	Yes	-
infrastructure will be dismantled.		Air quality	• Air pollution due to the increase of traffic of construction vehicles.	-		S	Yes	-
Rehabilitation of biophysical environment The biophysical environment will be rehabilitated.	1ENT	Soil	Backfilling of all voidsPlacing of topsoil on backfill	-		М	N/A	-
	VIRONN	Geology	 It is not foreseen that the decommissioning phase will impact on the geology of the site or vice versa. 	N/A	N/A	N/A	N/A	-
	BIOPHYSICAL ENVIRONMENT	Existing services infrastructure	 Generation of waste that need to be accommodated at the local landfill site. Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. Increase in construction vehicles. 			S	Yes	-
		Ground water	Pollution due to construction vehicles.	-		S	Yes	-
		Surface water	 Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (pans/dams/streams). 	-		S	Yes	-
		Local unemployment rate	Loss of employment.	-		L	Yes	-
	NT	Visual landscape	Potential visual impact on visual receptors in close proximity to proposed facility.	-		S	Yes	-
	SOCIAL/ECONOMIC ENVIRONMENT	Traffic volumes	Increase in construction vehicles.	-		S	Yes	-
		Health & Safety	 Air/dust pollution. Road safety. Increased crime levels. The presence of mine workers on the site may increase security risks associated with an increase in crime levels as a result of influx of people in the rural area. 			S	Yes	-
)CIAL/E	Noise levels	• The generation of noise as a result of construction vehicles, the use of machinery and people working on the site.	-		S	Yes	-
	SC	Tourism industry	• Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area.		N/A	N/A	N/A	-
N/A) No impact (+) Positive Impact (-) Negative Impact (S) Short Term (M) Medium Term (I-) Long 7		Heritage resources	 It is not foreseen that the decommissioning phase will impact on any heritage resources. 	-		S	Yes	-

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

Milnex 189 CC: BAR129 – BAR & EMPr: Prospecting Right without Bulk Samples for the prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of Portion 2, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province.

K) WHERE APPLICABLE, A SUMMARY OF THE FINDINGS AND IMPACTS MANAGEMENT MEASURES IDENTIFIED IN AN SPECIALIST REPORT COMPLYING WITH APPENDIX 6 OF THESE REGULATIONS AND AN INDICATION AS TO HOW THESE FINDINGS AND RECOMMENDATIONS HAVE BEEN INCLUDED IN THE FINAL REPORT;

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

L) ENVIRONMENTAL IMPACT STATEMENT

i) SUMMARY OF THE KEY FINDINGS

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

- Potential impacts on biodiversity: It is expected that some vegetation might be lost but through implementing mitigation measures, no adverse impacts are expected. It should be kept in mind that the application is without bulk sampling, only 500 boreholes and 100 pits will be taken.
- > Potential impact on heritage resources: Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.
- Potential impact on Palaeontological resources: Should fossils be exposed during construction work, it must immediately be reported to a palaeontologist so that an investigation and evaluation of the finds can be made.
- > Potential impacts on land use: The farm is currently utilised for grazing. The activity which will be subject to concurrent rehabilitation may have an impact on the land use.
- Potential social impacts: The presence of construction workers poses a potential risk to family structures and social networks. While the presence of construction workers does not in itself constitute a social impact, the manner in which construction workers conduct themselves can impact on local communities. The most significant negative impact is associated with the disruption of existing family structures and social networks.
- Potential negative impacts: (noise, dust, soil degradation, storm water, traffic, health and safety) associated with the operation of the facility are expected to be of low-high impact, of medium terms and site specific. These can be mitigated or negated through the implementation of practical and appropriate mitigation measures.
- Positive impacts: The prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite without bulk sampling, may result in socio-economic benefit to the area.

All possible negative impacts and risks that have been identified in this report can be effectively mitigated and managed by implementing the migratory measures as set out in the Environmental Management Programme (EMPr) attached in Part B.

ii) FINAL SITE MAP

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

Refer to Locality Map attached in Appendix 4.

iii) SUMMARY OF THE POSITIVE AND NEGATIVE IMPLICATIONS AND RISKS OF THE PROPOSED ACTIVITY AND IDENTIFIED ALTERNATIVES

- Increased noise levels
- Potential water and soil pollution impacts.
- Potential loss of fauna and flora.
- Increased vehicle activity.

- Increased dust levels.
- Increase in water consumption and possible depletion of groundwater resources.
- Potential visual impacts.

All possible negative impacts and risks that have been identified in this report can be effectively mitigated and managed by implementing the mitigation measures as set out in the Environmental Management Programme (EMPr) attached in Part B.

M) PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPR (Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation)

Management objectives include:

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

Expected outcomes include:

- > Minimum impacts on the environment as a result of prospecting without bulk sampling.
- > Compliance with legislative requirements.
- Mine is neat and tidy and well managed.

FINAL PROPOSED ALTERNATIVES

(Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment)

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. Due to the expected mineral resources, **Kimswa Mining (Pty) Ltd** would like to potentially prospect without bulk sampling for Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of Portion 2, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province, therefore there will be no other alternative (i.e. to facilitate the movement of machinery, equipment, infrastructure).

N) ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION.

Any aspects which have not formed part of the EMPr that must be made conditions of the Environmental Authorisation

- The operational activities and relevant rehabilitation of disturbed areas should be monitored against the improved EMPr and all other relevant environmental legislation.
- > A copy of the EMP should be made available onsite at all times.

- > Implementation of the proposed mitigation measures set out in the EMPr.
- O) DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE. (Which relate to the assessment and mitigation measures proposed)

The uncertainties in results are mostly related to the availability of information, time available to gather the relevant information as well as the sometimes-subjective nature of the assessment methodology. If the authority feels that specialists' studies need to be conducted, such will be corresponded to the applicant.

P) REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

Reasons why the activity should be authorized or not.

According to the PWP, the possibility to encounter the mineral applied for were identified.

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

Q) CONDITIONS THAT MUST BE INCLUDED IN THE AUTHORISATION

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

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

Period for which the Environmental Authorisation is required.

For a minimum of 5 years.

R) UNDERTAKING

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report.

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

I, Lizanne Esterhuizen (EAP) herewith confirms

- A. the correctness of the information provided in the reports \bigotimes
- 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:

Milnex 189 CC – Environmental Consultants

Name of company:

25 – 01 - 2019

Date:

S) FINANCIAL PROVISION

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

Applicant: Kimswa Mining (Pty) Ltd Evaluators: Milnex 189 CC					Ref No.: Date:	NC30/5/1/1/2/12252PR 25/01/2019	
			Α	В	С	D	E=A*B*C*D
No.	Description	Unit	Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and pow erlines)	m3	0	14,05	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	195,76	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	288,49	1	1	0
3	Rehabilitation of access roads	m2	100	35,03	1	1	3503
4 (A)	Demolition and rehabilitation of electrified railw ay lines	m	0	340,01	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railw ay lines	m	0	185,46	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	391,53	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	205242,16	1	1	0
7	Sealing of shafts adits and inclines	m3	0	105,09	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0,45875	136828,1	0,52	1	32640,34326
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	170416,93	1	1	0
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	494971,55	1	1	0
9	Rehabilitation of subsided areas	ha	0	114572,93	1	1	0
10	General surface rehabilitation	ha	0,45875	108390,94	1	1	49724,34373
11	River diversions	ha	0	108390,94	1	1	0
12	Fencing	m	0	123,64	1	1	0
13	Water management	ha	0	41213,28	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	1,37625	14424,65	1	1	19851,92456
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub To	tal 1	105719.6115

1	Preliminary and General	12686,35339	weighting factor 2	12686,35339
		12000,55555	1	12000,33339
2	Contingencies	1057	1,96115	10571,96115
			Subtotal 2	128977,93
			-	
			VAT (15%)	19346,69
				<u> </u>
			Grand Total	148325

Previously disturbed area is not counted for as this application is only for a prospecting right without bulk sampling

It is planned that 500 boreholes will be drilled (it may be less depending on the results) at varying depths ranging from 90-150m with hole diameters of at least 150mm.

7m x 4 m = 28m² 3m x 2.5m = 7.5m² 28m² + 7.5m² = 35.5m² 35.5m²/10 000 = 0.00355ha 0.00355ha x 500 boreholes = 1.775ha

(size of area needed for drill rig and related equipment for drilling one borehole.) (size of area needed for sampling tubes for one borehole.) (sum of the above mentioned.)

It is planned that 100 pits will be dug (it may be less depending on the results) at an extent of 3m (length) x 2m (breath) x 4m (depth).

(100 pits / 24 months) x 12 months = 50 pits dug per year Total area to be disturbed per year = 50 pits x $(3m \times 2m) / 10\ 000 = 0.03$ Ha disturbed per year Total area disturbed for 24 months = 100 pits x $(3m \times 2m) / 10\ 000 = 0.06$ Ha disturbed The area to be disturbed will be approximately 0.06ha

The total area to be disturbed will be approximately 1.835ha. in 48 months (4 years) thus approximately 0.45875ha will be disturbed per year.

i) Explain how the aforesaid amount was derived.

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

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

Financial Guarantee

The financial guarantee for the rehabilitation for land disturbed by **Kimswa Mining (Pty) Ltd**, submitted together with the application for a prospecting right.

Rehabilitation Fund

Kimswa Mining (Pty) Ltd will also make provision for rehabilitation during closure by establishing a rehabilitation trust.

iii) Motivation for the deviation.

Not applicable

T) OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

COMPLIANCE WITH THE PROVISIONS OF SECTIONS 24(4)(A) AND (B) READ WITH SECTION 24 (3) (A) AND (7) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998). THE EIA REPORT MUST INCLUDE THE:

i. Impact on the socio-economic conditions of any directly affected person. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as Appendix 2.19.1 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

The following impacts may be regarded as community impacts:

- Increased noise levels
- Potential water and soil pollution impacts.
- Potential loss of fauna and flora.
- Increased vehicle activity.
- Increased dust levels.
- Increase in water consumption and possible depletion of groundwater resources.
- Potential visual impacts.

Indirect socio-economic benefits are expected to be associated with the creation of employment.

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

Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected by the National Heritage Resources Act no 25 of 1999. Therefore, if such resources are found during the prospecting or development activities, they shall not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA must be contacted immediately and work must stop.

U) OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4)(A) AND (B) OF THE ACT.

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

From a local perspective, the prospecting of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite near Niekerkshoop on a portion of Portion 2, a portion of the Remaining Extent of Portion 4 and a portion of the Remaining Extent of Portion 6 of the farm Niewejaars Kraal 40 and Portion 4, a portion of the Remaining Extent of the farm Viegulands Put 39, Registration Division: Prieska, Northern Cape Province, is preferred because the geological formation supports the possibility that the minerals applied for could be found on the proposed area. Please see PWP attached as **Appendix 9**.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Draft environmental management programme.

A) DETAILS OF THE EAP

- i) The EAP who prepared the report
- ii) Expertise of the EAP

Name of Practitioner	Qualifications	Contact details
	Honours Degree in Environmental	Tel No.: (018) 011 1925
Lizanne Esterhuizen	Science (refer to Appendix 1)	Fax No.: (053) 963 2009
		e-mail address: lizanne@milnex-sa.co.za
Percy Sehaole	Master's Degree in Environmental	Tel No.: (018) 011 1925
	Science (refer to Appendix 1)	Fax No.: (053) 963 2009
		e-mail address: percy@milnex-sa.co.za
	Master's Degree in Environmental	Tel No.: (018) 011 1925
Danie Labuschagne	Management and Geography (refer to	Fax No.: (053) 963 2009
	Appendix 1)	e-mail address: <u>danie@milnex-sa.co.za</u>

B) DESCRIPTION OF THE ASPECTS OF THE ACTIVITY (Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).

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

C) COMPOSITE MAP

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

Refer to Locality Map, attached as Appendix 4.

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)

Closure objectives for the prospecting right without bulk sampling will aim to ensure that the residual post-closure impacts be minimized and be acceptable to relevant parties. To achieve these closure objectives, the following will be implemented:

- All prospecting related infrastructure, foundations and concrete areas will be decommissioned, removed from the site and appropriately disposed of. Reclaimable structures such as metal, electrical installations or equipment will be sold for re-use or as scrap.
- All disturbed areas within the site not already vegetated will be re-vegetated with appropriate indigenous, ecologically adapted species appropriate to the area and the final land use as soon as possible after operation ceases. Progress of vegetation growth/establishment, stability and drainage/erosion will be monitored and, in the event of adverse trends being identified, corrective measures will be implemented.

- Vegetation monitoring will consider, inter alia, the establishment of perennial ground cover and infestation by alien invasive plant species. The encroachment of indigenous vegetation into the area will be used as an indication of a stable, selfsustaining vegetation cover with little risk of retrogressing to a situation where are and water pollution may occur.
 - Final landforms must be resilient to perturbation and also be self-sustaining to obviate/limit further/ongoing
 interventions and maintenance by Kimswa Mining (Pty) Ltd.
 - The remaining impacts be of an acceptable nature with minimal deterioration over time.
 - The final outcome of the mine site rehabilitation would be productive systems, where required sustaining either livestock and/or wildlife.
 - Environmental and human quality of life, including health and safety requirements in general, would not be compromised; and
 - Closure is achieved in an efficient and cost-effective manner as possible and with minimum socioeconomic changes.

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

1. Upfront planning/development

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

2. Physical stability

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

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

3. Environmental quality

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

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

4. Health and safety

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

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

5. Land capability / land use

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

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

6. Aesthetic quality

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

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

7. Landscape viability

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

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

8. Biodiversity

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

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

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 & Closure Plan is attached as Appendix 8.

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

CALCULATION OF THE QUANTUM

pplicant: aluators:	Kimswa Mining (Pty) Ltd Milnex 189 CC				Ref No.: Date:	NC30/5/1/1/2 25/01/2019	2/12252PK
			Α	В	С	D	E=A*B*C*D
No.	Description	Unit	Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and pow erlines)	m3	0	14,05	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	195,76	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	288,49	1	1	0
3	Rehabilitation of access roads	m2	100	35,03	1	1	3503
4 (A)	Demolition and rehabilitation of electrified railw ay lines	m	0	340,01	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railw ay lines	m	0	185,46	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	391,53	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	205242,16	1	1	0
7	Sealing of shafts adits and inclines	m3	0	105,09	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0,45875	136828,1	0,52	1	32640,34326
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	170416,93	1	1	0
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	494971,55	1	1	0
9	Rehabilitation of subsided areas	ha	0	114572,93	1	1	0
10	General surface rehabilitation	ha	0,45875	108390,94	1	1	49724,34373
11	River diversions	ha	0	108390,94	1	1	0
12	Fencing	m	0	123,64	1	1	0
13	Water management	ha	0	41213,28	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	1,37625	14424,65	1	1	19851,92456
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0

1	Preliminary and General	12686,35339	weighting factor 2	12686,35339	
reinniary and General		12000,00009	1	12000,00009	
2	Contingencies	1057	1,96115	10571,96115	
			Subtotal 2	128977,93	
			VAT (15%)	19346,69	
			Grand Total	148325	

Previously disturbed area is not counted for as this application is only for a prospecting right without bulk sampling

It is planned that 500 boreholes will be drilled (it may be less depending on the results) at varying depths ranging from 90-150m with hole diameters of at least 150mm.

7m x 4 m = 28m² 3m x 2.5m = 7.5m² 28m² + 7.5m² = 35.5m² 35.5m²/10 000 = 0.00355ha 0.00355ha x 500 boreholes = 1.775ha (size of area needed for drill rig and related equipment for drilling one borehole.) (size of area needed for sampling tubes for one borehole.) (sum of the above mentioned.)

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The total area to be disturbed will be approximately 1.835ha. in 48 months (4 years) thus approximately 0.45875ha will be disturbed per year.

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

Financial Guarantee

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Rehabilitation Fund

Kimswa Mining (Pty) Ltd will also make provision for rehabilitation during closure by establishing a rehabilitation trust.

E) IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

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

ACTIVITIES	PHASE	SIZE AND SCALE	MITIGATION MEASURES	COMPLIANCE WITH	TIME PERIOD FOR IMPLEMENTATION
		of disturbance		STANDARDS	
(E.g. For prospecting - drill site, site		(volumes, tonnages			Describe the time period when the measures
camp, ablution facility, accommodation,	(of operation in	and hectares or m ²)	(describe how each of the recommendations in		in the environmental management programme
equipment storage, sample storage, site	which activity will		herein will remedy the cause of pollution or	(A description of how	must be implemented Measures must be
office, access route etcetcetc	take place.		degradation and migration of pollutants)	each of the	implemented when required.
				recommendations	With regard to Rehabilitation specifically this
E.g. For mining,- excavations, blasting,	State;			herein will comply with	must take place at the earliest opportunity.
stockpiles, discard dumps or dams,	Planning and			any prescribed	.With regard to Rehabilitation, therefore state
Loading, hauling and transport, Water	design,			environmental	either:
supply dams and boreholes,	Pre-Construction'			management standards	Upon cessation of the individual activity
accommodation, offices, ablution, stores,	Construction,			or practices that have	Or.
workshops, processing plant, storm water	Operational,			been identified by	Upon the cessation of mining, bulk sampling
control, berms, roads, pipelines, power	Rehabilitation,			Competent Authorities)	or prospecting as the case may be.
lines, conveyors, etcetcetc.)	Closure, Post				
	closure).				
Clearance of vegetation	Drilling and pitting	1766.39 ha - Only	1. Site clearing must take place in a phased	Compliance with Duty of	Duration of operations on the prospecting
	phase -	the areas where	manner, as and when required.	Care as detailed within	activities.
	(construction and	prospecting takes	2. Areas which are not to be prospected on within	NEMA	
	operation phase)	place, might be	two months must not be cleared to reduce		
		cleared or the	erosion risks.		
		vegetation disturbed.	3. The area to be cleared must be clearly		
			demarcated and this footprint strictly		
		Please refer to PWP	maintained.		
		(Appendix 9)	4. Spoil that is removed from the site must be		
			removed to an approved spoil site or a licensed		
			landfill site.		
			5. The necessary silt fences and erosion control		
			measures must be implemented in areas where		
Construction of roads	Drilling and pitting		these risks are more prevalent.	Compliance with Duty of	Duration of anarations on the program
Construction of roads	Drilling and pitting		1. Planning of access routes to the site for	Compliance with Duty of	Duration of operations on the prospecting
	phase -		construction/prospecting purposes shall be	Care as detailed within NEMA	activities.
			done in conjunction with the Contractor and the	INEIVIA	

Landowner. All agreements reached should be	
documented and no verbal agreements should	
be made. The Contractor shall clearly mark all	
access roads. Roads not to be used shall be	
marked with a "NO ENTRY for prospecting	
vehicles" sign.	
2. Construction routes and required access roads	
must be clearly defined.	
3. Damping down of the un-surfaced roads must	
be implemented to reduce dust and nuisance.	
4. Soils compacted by construction/prospecting	
activities shall be deep ripped to loosen	
compacted layers and re-graded to even	
running levels.	
5. The contractor must ensure that damage	
caused by related traffic from a gravel road is	
repaired continuously. The costs associated	
with the repair must be borne by the contractor;	
6. Dust suppression measures must be	
implemented for heavy vehicles such as wetting	
of gravel roads on a regular basis and ensuring	
that vehicles used to transport the gravel are	
fitted with tarpaulins or covers;	
7. All vehicles must be road-worthy and drivers	
must be qualified and made aware of the	
potential road safety issues and need for strict	
speed limits.	
Prospecting Diamonds Alluvial (DA), Drilling and pitting 1766.39 ha - Only 1. The Contractor should, prior to the Compliance with Duty of Duration of operations on the mine	
Diamonds General (D) & Diamonds in phase - the areas where commencement of earthworks determine the Care as detailed within	
Kimberlite – prospecting without bulk (construction and prospecting takes average depth of topsoil (If topsoil exists), and NEMA	
sampling – Soils and geology operation phase) place, might be agree on this with the ECO. The full depth of	
cleared or the topsoil should be stripped from areas affected	
vegetation disturbed. by construction and related activities prior to the	
commencement of major earthworks. This	
Please refer to PWP should include the building footprints, working	
(Appendix 9) areas and storage areas. Topsoil must be	

			reused where possible to rehabilitate disturbed		
			areas.		
		2.	Care must be taken not to mix topsoil and		
			subsoil or any other material, during stripping.		
		3.	The topsoil must be conserved on site in and		
			around the pit/trench area.		
		4.	Subsoil and overburden in the prospecting area		
			should be stockpiled separately to be returned		
			for backfilling in the correct soil horizon order.		
		5.	If stockpiles are exposed to windy conditions or		
			heavy rain, they should be covered either by		
			vegetation or geofabric, depending on the		
			duration of the project. Stockpiles may further		
			be protected by the construction of berms,		
			trenches or low brick walls around their bases.		
		6.	Stockpiles should be kept clear of weeds and		
			alien vegetation growth by regular weeding.		
		7.	Where contamination of soil is expected,		
			analysis must be done prior to disposal of soil to		
			determine the appropriate disposal route. Proof		
			from an approved waste disposal site where		
			contaminated soils are dumped if and when a		
			spillage/leakage occurs should be attained and		
			given to the project manager.		
		8.	The impact on the geology will be permanent.		
			There is no mitigation measure.		
Prospecting Diamonds Alluvial (DA), Drilling and pitting	1766.39 ha - Only	1.	The prospecting activities must aim to adhere to	Compliance with Duty of	Duration of operations on the prospecting
Diamonds General (D) & Diamonds in phase -	the areas where		the relevant noise regulations and limit noise to	Care as detailed within	area
Kimberlite – prospecting without bulk (construction and	prospecting takes		within standard working hours in order to reduce	NEMA	
sampling operation phase)	place, might be		disturbance of dwellings in close proximity to the		
	cleared or the		development.		
		2.	Mine, pans, workshops and other noisy fixed		
			facilities should be located well away from noise		
	Please refer to PWP		sensitive areas. Once the proposed final layouts		
	(Appendix 9)		are made available by the Contractor(s), the		

sites must be evaluated in detail and specific
measures designed in to the system.
3. Truck traffic should be routed away from noise
sensitive areas, where possible.
4. Noise levels must be kept within acceptable
limits.
5. Noisy operations should be combined so that
they occur where possible at the same time.
6. Mine workers to wear necessary ear protection
gear.
7. Noisy activities to take place during allocated
hours.
8. Noise from labourers must be controlled.
9. Noise suppression measures must be applied
to all equipment. Equipment must be kept in
good working order and where appropriate fitted
with silencers which are kept in good working
order. Should the vehicles or equipment not be
in good working order, the Contractor may be
instructed to remove the offending vehicle or
machinery from the site.
10. The Contractor must take measures to
discourage labourers from loitering in the area
and causing noise disturbance. Where possible
labour shall be transported to and from the site
by the Contractor or his Sub-Contractors by the
Contractors own transport.
11. Implementation of enclosure and cladding of
processing plants.
12. Applying regular and thorough maintenance
schedules to equipment and processes. An
increase in noise emission levels very often is a
sign of the imminent mechanical failure of a
machine.

IMPACT MANAGEMENT OUTCOMES

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

ACTIVITY	POTENTIAL	ASPECTS	PHASE	MITIGATION	STANDARD TO BE
(whether listed or not listed). (E.g. Excavations, blasting, stockpiles,	IMPACT	AFFECTED	In which impact is anticipated	ТҮРЕ	ACHIEVED
discard dumps or dams, Loading, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etcetcetc.).	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etcetc)		(e.g. Construction, commissioning, operational Decommissioning, closure, post- closure)	 (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control Control through management and monitoring Remedy through rehabilitation 	(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Clearance of vegetation	Loss or fragmentation of habitats	Fauna & flora	(construction and operation phase)	 Existing vegetation 1. Vegetation removal must be limited to the prospecting area. 2. Vegetation to be removed as it becomes necessary rather than removal of all vegetation throughout the site in one step. 3. No vegetation to be used for firewood. 4. Exotic and invasive plant species should not be allowed to establish, if the development is approved. 5. There should be a preconstruction walk-through of the development footprint/project site in order to locate individuals of plant species of conservation concern. A search and rescue exercise must be done to locate and relocate any protected species to a suitable and similar habitat where these plants can grow without any disturbance; 	Minimisation of impacts to acceptable limits

6. In case Camel Thorn or Shepherd's trees are found	
permits must be obtained from DAFF to remove these	
individuals. The contractor must apply for these permits	
in a phased manner as mining proceeds.	
Rehabilitation	
7. All damaged areas shall be rehabilitated upon	
completion of the contract.	
8. Re-vegetation of the disturbed site is aimed at	
-	
approximating as near as possible the natural	
vegetative conditions prevailing prior to construction.	
9. All natural areas impacted during	
construction/prospecting must be rehabilitated with	
locally indigenous grasses typical of the representative	
botanical unit.	
10. Rehabilitation must take place in a phased approach as	
soon as possible.	
11. Rehabilitation process must make use of species	
indigenous to the area. Seeds from surrounding seed	
banks can be used for re-seeding.	
12. Rehabilitation must be executed in such a manner that	
surface run-off will not cause erosion of disturbed areas.	
13. Planting of indigenous tree species in areas not to be	
cultivated or built on must be encouraged.	
Demarcation of prospecting area	
14. All plants not interfering with prospecting operations	
shall be left undisturbed clearly marked and indicated	
on the site plan.	
15. The prospecting area must be well demarcated and no	
construction/prospecting activities must be allowed	
outside of this demarcated footprint.	
16. Vegetation removal must be phased in order to reduce	
impact of construction/prospecting.	

17. Site office and laydown areas must be clearly
demarcated and no encroachment must occur beyond demarcated areas.
18. Strict and regular auditing of the prospecting process to
ensure containment of the prospecting and laydown
areas.
19. Soils must be kept free of petrochemical solutions that
may be kept on site during construction/prospecting.
Spillage can result in a loss of soil functionality thus
limiting the re-establishment of flora.
Utilisation of resources
20. Gathering of firewood, fruit, muti plants, or any other
natural material onsite or in areas adjacent to the site is
prohibited unless with prior approval of the ECO.
Exotic vegetation
21. Alien vegetation on the site will need to be controlled.
22. The Contractor should be responsible for implementing
a programme of weed control (particularly in areas
where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.
23. The spread of exotic species occurring throughout the
site should be controlled.
24. Weed control measures must be applied to eradicate
any noxious weeds (category 1a &1b species) on
disturbed areas.
Herbicides
25. Herbicide use shall only be allowed according to
contract specifications. The application shall be according to set specifications and under supervision of
a qualified technician. The possibility of leaching into the
surrounding environment shall be properly investigated
and only environmentally friendly herbicides shall be
used.

				27. 28. 29. 30. 31.	The use of pesticides and herbicides on the site must be discouraged as these impact on important pollinator species of indigenous vegetation. Fauna Rehabilitation to be undertaken as soon as possible after the prospecting activities have been completed. No trapping or snaring to fauna on the construction/prospecting site should be allowed. No faunal species must be disturbed, trapped, hunted or killed by maintenance staff during any routine maintenance at the development. Any fauna threatened by the construction and operation activities should be removed to safety by the ECO or appropriately qualified environmental officer. All construction vehicles should adhere to a low speed limit (<30km/h) to avoid collisions with susceptible species such as snakes and tortoises. If trenches need to be dug for electrical cabling or other purposes, these should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain	
Prospecting Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite – prospecting without bulk sampling	Loss of topsoil	Soil	(construction and operation phase)	1. 2. 3.	soil ramps allowing fauna to escape the trench. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil, and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas. Care must be taken not to mix topsoil and subsoil or any other material, during stripping. The topsoil must be conserved on site in and around the pit/trench area.	Minimisation of impacts to acceptable limits

4. Subsoil and overburden in the prospecting area should
be stockpiled separately to be returned for backfilling in
the correct soil horizon order.
5. If stockpiles are exposed to windy conditions or heavy
rain, they should be covered either by vegetation or
geofabric, depending on the duration of the project.
Stockpiles may further be protected by the construction
of berms or low brick walls around their bases.
6. Stockpiles should be kept clear of weeds and alien
vegetation growth by regular weeding.
7. Where contamination of soil is expected, analysis must
be done prior to disposal of soil to determine the
appropriate disposal route. Proof from an approved
waste disposal site where contaminated soils are
dumped if and when a spillage/leakage occurs should
be attained and given to the project manager.
Establish an effective record keeping system for each
area where soil is disturbed for prospecting purposes.
These records should be included in environmental
performance reports, and should include all the records
below.
Record the GPS coordinates of each area.
Record the date of topsoil stripping.
 Record the GPS coordinates of where the topsoil is
stockpiled.
 Record the date of cessation prospecting activities at
the particular site.
 Photograph the area on cessation of prospecting
activities.
 Record date and depth of re-spreading of topsoil.
Photograph the area on completion of rehabilitation and
on an annual basis thereafter to show vegetation
establishment and evaluate progress of restoration over
time.

Erosion	Soil	(construction and	1.	An effective system of run-off control should be	Minimisation of impacts to
	Air	operation phase)		implemented, where it is required, that collects and	acceptable limits
	Water	-p		safely disseminates run-off water from all hardened	
				surfaces and prevents potential down slope erosion.	
			2.	Periodical site inspection should be included in	
				environmental performance reporting that inspects the	
				effectiveness of the run-off control system and	
				specifically records the occurrence of any erosion on	
				site or downstream.	
			3.	Implement an effective system of run-off control, where	
			0.	it is required, that collects and safely disseminates run-	
				off water from all hardened surfaces and prevents	
				potential down slope erosion.	
			٨	Monitor the area regularly after larger rainfall events to	
			٦.	determine where erosion may be initiated and then	
				mitigate by modifying the soil micro-topography and	
				revegetation or soil erosion control efforts accordingly	
			5	Wind screening and stormwater control should be	
			5.	undertaken to prevent soil loss from the site.	
			6	The use of silt fences and sand bags must be	
			0.	implemented in areas that are susceptible to erosion.	
			7	Other erosion control measures that can be	
			1.	implemented are as follows:	
				 Brush packing with cleared vegetation 	
				 Mulch or chip packing 	
				 Planting of vegetation 	
				 Hydroseeding/hand sowing 	
			8.	Sensitive areas need to be identified prior to	
			0.	construction/prospecting so that the necessary	
			0	precautions can be implemented.	
			9.	All erosion control mechanisms need to be regularly maintained.	
			10	Seeding of topsoil and subsoil stockpiles to prevent	
			10.	wind and water erosion of soil surfaces.	
			11		
				Retention of vegetation where possible to avoid soil	
			1	erosion.	

			 Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time. Re-vegetation of disturbed surfaces should occur immediately after construction/prospecting activities are completed. This should be done through seeding with indigenous grasses. No impediment to the natural water flow other than approved erosion control works is permitted. To prevent stormwater damage, the increase in stormwater run-off resulting from construction/prospecting activities must be estimated and the drainage system assessed accordingly. Stockpiles not used in three (3) months after stripping must be seeded or backfilled to prevent dust and erosion.
Air Pollution	Air	(construction and operation phase)	Dust control Minimisation of impacts to 1. Wheel washing and damping down of un-surfaced and un-vegetated areas. Minimisation of impacts to 2. Retention of vegetation where possible will reduce dust travel. Clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas. Damping down of all exposed soil surfaces with a water bowser or sprinklers when necessary to reduce dust. 5. The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the neighbouring communities. A speed limit of 30km/h must not be exceeded on site. 7. Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor. Any dirt roads that are utilised by the workers must be regularly maintained to ensure that dust levels are controlled.

		 Odour control 9. Regular servicing of vehicles in order to limit gaseous emissions. 10. Regular servicing of onsite toilets to avoid potential odours.
		Rehabilitation 11. The Contractor should commence rehabilitation of exposed soil surfaces as soon as practical after completion of earthworks.
		 Fire prevention 12. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires. 13. The Contractor shall have operational fire-fighting
Noise	(construction and	 equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process. The prospecting activities must aim to adhere to the Minimisation of impacts to
	operation phase)	 relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development. Mine, crushers, workshops and other noisy fixed
		facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed in to the system.
		 Truck traffic should be routed away from noise sensitive areas, where possible. Noise levels must be kept within acceptable limits. Noisy operations should be combined so that they occur
		 While workers to wear necessary ear protection gear.

Impact on potential cultural, heritage artefacts and fossils.	Heritage and Palaeontology	(construction and operation phase)	11. 12. 1. 2. 3. 4.	Noisy activities to take place during allocated hours. Noise from labourers must be controlled. Noise suppression measures must be applied to all equipment. Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from the site. The Contractor must take measures to discourage labourers from loitering in the area and causing noise disturbance. Where possible labour shall be transported to and from the site by the Contractor or his Sub- Contractors by the Contractors own transport. Implementation of enclosure and cladding of processing plants. Applying regular and thorough maintenance schedules to equipment and processes. An increase in noise emission levels very often is a sign of the imminent mechanical failure of a machine. Any finds must be reported to the nearest National Monuments office to comply with the National Heritage Resources Act (Act No 25 of 1999) and to DEA. Local museums as well as the South African Heritage Resource Agency (SAHRA) should be informed if any artefacts/ fossils are uncovered in the affected area. The Contractor must ensure that his workforce is aware of the necessity of reporting any possible historical, archaeological or palaeontological finds to the ECO so that appropriate action can be taken. Known sites should be clearly marked in order that they can be avoided. The workeforce should also be informed that fenced-off areas are no-go areas.	Minimisation of impacts to acceptable limits
			4. 5.	can be avoided. The workeforce should also be	

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				with formations and its fossils or a palaeontologist should be appointed during the digging and excavation	
				phase of the development.	
			6.	All digging, excavating, drilling or blasting activities must	
				be stopped if heritage and/or palaeontological artefacts	
				are uncovered and a specialist should be called in to	
				determine proper management, mitigation, excavation	
				and/or collecting measures.	
			7.	Any discovered artefacts or fossils shall not be removed	
				under any circumstances. Any destruction of a site can	
				only be allowed once a permit is obtained and the site	
				has been mapped and noted. Permits shall be obtained	
				from SAHRA should the proposed site affect any world	
				heritage/palaeontology sites or if any	
				heritage/palaeontology sites are to be destroyed or	
				altered.	
			8.	Under no circumstances shall any artefacts be	
				removed, destroyed or interfered with by anyone on the	
				site; and contractors and workers shall be advised of the	
				penalties associated with the unlawful removal of	
				cultural, historical, archaeological or palaeontological	
				artefacts, as set out in the NHRA (Act No. 25 of 1999),	
				Section 51. (1).	
Waste management	Pollution	1		Litter management	Minimisation of impacts to
		operation phase)	1.	Refuse bins must be placed at strategic positions to	acceptable limits
				ensure that litter does not accumulate within the	
				construction site.	
			2.	The Contractor shall supply waste collection bins where	
				such is not available and all solid waste collected shall	
				be disposed of at registered/licensed landfill.	
			3.	Good housekeeping practices should be implemented	
				to regularly maintain the litter and rubble situation on the	
				construction site.	
			4.	If possible and feasible, all waste generated on site	
				must be separated into glass, plastic, paper, metal and	

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wood and recycled. An independent contractor can be
appointed to conduct this recycling.
5. Littering by the employees of the Contractor shall not be
allowed under any circumstances. The ECO shall
monitor the neatness of the work sites as well as the
Contractor campsite.
6. Skip waste containers should be maintained on site.
These should be kept covered and arrangements made
for them to be collected regularly.
7. All waste must be removed from the site and
transported to a landfill site promptly to ensure that it
does not attract vermin or produce odours.
8. Where a registered waste site is not available close to
the construction site, the Contractor shall provide a
method statement with regard to waste management.
9. A certificate of disposal shall be obtained by the
Contractor and kept on file, if relevant.
10. Under no circumstances may solid waste be burnt on
site.
11. All waste must be removed promptly to ensure that it
does not attract vermin or produce odours.
Hazardous waste
12. All waste hazardous materials must be carefully stored
as advised by the ECO, and then disposed of offsite at
a licensed landfill site, where practical. Incineration may
be used where relevant.
13. Contaminants to be stored safely to avoid spillage.
14. Machinery must be properly maintained to keep oil
leaks in check.
15. All necessary precaution measures shall be taken to
prevent soil or surface water pollution from hazardous
materials used during construction and any spills shall
immediately be cleaned up and all affected areas
rehabilitated.

Sanitation
16. The Contractor shall install mobile chemical toilets on
the site.
17. Staff shall be sensitised to the fact that they should use
these facilities at all times. No indiscriminate sanitary
activities on site shall be allowed.
18. Toilets shall be serviced regularly and the ECO shall
inspect toilets regularly.
19. Toilets should be no closer than 50m or above the 1:100
year flood line from any natural or manmade water
bodies or drainage lines or alternatively located in a
place approved of by the Engineer.
20. Under no circumstances may open areas, neighbours
fences or the surrounding bush be used as a toilet
facility.
21. The construction of "Long Drop" toilets is forbidden, but
rather toilets connected to the sewage treatment plant.
22. Potable water must be provided for all construction staff.
Remedial actions
23. Depending on the nature and extent of the spill,
contaminated soil must be either excavated or treated
on-site.
24. Excavation of contaminated soil must involve careful
removal of soil using appropriate tools/machinery to
storage containers until treated or disposed of at a
licensed hazardous landfill site.
25. The ECO must determine the precise method of
treatment for polluted soil. This could involve the
application of soil absorbent materials as well as oil-
digestive powders to the contaminated soil.
26. If a spill occurs on an impermeable surface such as
cement or concrete, the surface spill must be contained
using oil absorbent material.
27. If necessary, oil absorbent sheets or pads must be
attached to leaky machinery or infrastructure.

				 28. Materials used for the remediation of petrochemical spills must be used according to product specifications and guidance for use. 29. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment, and stored in adequate containers until appropriate disposal.
Water Use and Quality	Water pollution	Water	(construction and operation phase)	 Water Use 1. Develop a sustainable water supply management plan to minimise the impact to natural systems by managing water use, avoiding depletion of aquifers and minimising impacts to water users. 2. Water must be reused, recycled or treated where possible.
				 Water Quality The quality and quantity of effluent streams discharged to the environment including stormwater should be managed and treated to meet applicable effluent discharge guidelines. Discharge to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria outside a scientifically established mixing zone. Efficient oil and grease traps or sumps should be installed and maintained at refueling facilities, workshops, fuel storage depots, and containment areas and spill kits should be available with emergency
				 response plans. Stormwater 6. The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids and silt or chemical pollutants.

7. Silt fences should be used to prevent any soil entering
the stormwater drains.
8. Temporary cut off drains and berms may be required to
capture stormwater and promote infiltration.
9. Promote a water saving mind set with
construction/prospecting workers in order to Contractor
ensure less water wastage.
10. Hazardous substances must be stored at least 40m
from any water bodies on site to avoid pollution.
11. The installation of the stormwater system must take
place as soon as possible to attenuate stormwater from
the construction phase as well as the operation phase.
12. Earth, stone and rubble is to be properly disposed of, or
utilized on site so as not to obstruct natural water path
ways over the site. i.e. these materials must not be
placed in stormwater channels, drainage lines or rivers.
13. There should be a periodic checking of the site's
drainage system to ensure that the water flow is
unobstructed.
14. If a batching plant is necessary, run-off should be
managed effectively to avoid contamination of other
areas of the site. Untreated runoff from the batch plant
must not be allowed to get into the storm water system
or nearby streams, rivers or erosion channels or
dongas.
Groundwater resource protection
15. Process solution storage ponds and other
impoundments designed to hold non fresh water or non-
treated process effluents should be lined and be
equipped with sufficient wells to enable monitoring of
water levels and quality.
Sanitation
Gaintation

16. Adequate sanitary facilities and ablutions must be
provided for construction workers (1 toilet per every 15
workers).
17. The facilities must be regularly serviced to reduce the
risk of surface or groundwater pollution.
Concrete mixing
18. Concrete contaminated water must not enter soil or any
natural drainage system as this disturbs the natural
acidity of the soil and affects plant growth.
Public areas
19. Food preparation areas should be provided with
adequate washing facilities and food refuse should be
stored in sealed refuse bins which should be removed
from site on a regular basis.
20. The Contractor should take steps to ensure that littering
by construction/prospecting workers does not occur and
persons should be employed on site to collect litter from
the site and immediate surroundings, including litter
accumulating at fence lines.
21. No washing or servicing of vehicles on site.

F) IMPACT MANAGEMENT ACTIONS

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

ACTIVITY	POTENTIAL IMPACT	MITIGATION	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Whether listed or not listed.		ТҮРЕ		
(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etcetcetc.).	surface water contamination,	 (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control Control through management and monitoring Remedy through rehabilitation 	Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either: Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or prospecting as the case may be.	(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Clearance of vegetation	Loss or fragmentation of habitats	 Existing vegetation Vegetation removal must be limited to the prospecting site. Vegetation to be removed as it becomes necessary rather than removal of all vegetation throughout the site in one step. No vegetation to be used for firewood. Exotic and invasive plant species should not be allowed to establish, if the development is approved. There should be a preconstruction walk-through of the development footprint/project site in order to locate individuals of plant species of conservation concern. A search and rescue exercise must be done to locate and relocate any protected species to a suitable and similar habitat where these plants can grow without any disturbance; In case Camel Thorn or Shepherd's trees are found permits must be obtained from DAFF to remove these individuals. The 	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

 contractor must apply for these permits in a phased manner as mining proceeds. Rehabilitation 7. All damaged areas shall be rehabilitated upon completion of the contract. 8. Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to construction. 9. All natural areas impacted during construction/prospecting must be rehabilitated with locally indigenous grasses typical of the representative botanical unit. 10. Rehabilitation must take place in a phased approach as soon as possible. 11. Rehabilitation process must make use of species indigenous to the area. Seeds from surrounding seed banks can be used for reseeding. 12. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas. 13. Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged. Demarcation of prospecting area 14. All plants not interfering with prospecting operations shall be left undisturbed clearly marked and indicated on the site plan. 15. The prospecting area must be well demarcated and no construction activities must be allowed outside of this demarcated 		
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15. The prospecting area must be well demarcated and no construction activities must be allowed outside of this demarcated	14. All plants not interfering with prospecting operations shall be left	
construction activities must be allowed outside of this demarcated	undisturbed clearly marked and indicated on the site plan.	
	15. The prospecting area must be well demarcated and no	
	construction activities must be allowed outside of this demarcated	
footprint.	footprint.	
16. Vegetation removal must be phased in order to reduce impact of	16. Vegetation removal must be phased in order to reduce impact of	
construction/prospecting.		
17. Site office and laydown areas must be clearly demarcated and no	17. Site office and laydown areas must be clearly demarcated and no	
encroachment must occur beyond demarcated areas.	encroachment must occur beyond demarcated areas.	
18. Strict and regular auditing of the prospecting process to ensure	18. Strict and regular auditing of the prospecting process to ensure	
containment of the prospecting and laydown areas.	containment of the prospecting and laydown areas.	
19. Soils must be kept free of petrochemical solutions that may be	19. Soils must be kept free of petrochemical solutions that may be	
kept on site during construction/prospecting. Spillage can result in	kept on site during construction/prospecting. Spillage can result in	

a loss of soil functionality thus limiting the re-establishment of
flora.
Utilisation of resources
20. Gathering of firewood, fruit, muti plants, or any other natural
material onsite or in areas adjacent to the site is prohibited unless
with prior approval of the ECO.
Exotic vegetation
21. Alien vegetation on the site will need to be controlled.
22. The Contractor should be responsible for implementing a
programme of weed control (particularly in areas where soil has
been disturbed); and grassing of any remaining stockpiles to
prevent weed invasion.
23. The spread of exotic species occurring throughout the site should
be controlled.
24. Weed control measures must be applied to eradicate any noxious
weeds (category 1a &1b species) on disturbed areas.
Herbicides
25. Herbicide use shall only be allowed according to contract
specifications. The application shall be according to set
specifications and under supervision of a qualified technician. The
possibility of leaching into the surrounding environment shall be
properly investigated and only environmentally friendly herbicides
shall be used.
26. The use of pesticides and herbicides on the site must be
discouraged as these impact on important pollinator species of
indigenous vegetation.
Forme
Fauna
27. Rehabilitation to be undertaken as soon as possible after
prospecting has been completed.
28. No trapping or snaring to fauna on the construction/prospecting
site should be allowed.

		 29. No faunal species must be disturbed, trapped, hunted or killed by maintenance staff during any routine maintenance at the development. 30. Any fauna threatened by the construction and operation activities should be removed to safety by the ECO or appropriately qualified environmental officer. 31. All construction vehicles should adhere to a low speed limit (<30km/h) to avoid collisions with susceptible species such as snakes and tortoises. 32. If trenches need to be dug for electrical cabling or other purposes, these should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench. 		
Prospecting Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite – prospecting without bulk sampling	Loss of topsoil	 The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil, and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction/prospecting and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas. Care must be taken not to mix topsoil and subsoil or any other material, during stripping. The topsoil must be conserved on site in and around the pit/trench area. Subsoil and overburden in the prospecting area should be stockpiled separately to be returned for backfilling in the correct soil horizon order. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal 	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

Erosion	 route. Proof from an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager. Establish an effective record keeping system for each area where soil is disturbed for prospecting purposes. These records should be included in environmental performance reports, and should include all the records below. Record the GPS coordinates of each area. Record the date of topsoil stripping. Record the date of cessation prospecting activities at the particular site. Photograph the area on cessation of prospecting activities. Record date and depth of re-spreading of topsoil. Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time. An effective system of run-off control should be implemented, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion. Periodical site inspection should be included in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records the occurrence of any 	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.
	where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.Periodical site inspection should be included in environmental performance reporting that inspects the effectiveness of the run-		recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed

	6. The use of silt fences and sand bags must be implemented in		
	areas that are susceptible to erosion.		
	7. Other erosion control measures that can be implemented are as		
	follows:		
	 Brush packing with cleared vegetation 		
	 Mulch or chip packing 		
	 Planting of vegetation 		
	 Hydroseeding/hand sowing 		
	8. Sensitive areas need to be identified prior to		
	construction/prospecting so that the necessary precautions can		
	be implemented.		
	9. All erosion control mechanisms need to be regularly maintained.		
	10. Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces.		
	11. Retention of vegetation where possible to avoid soil erosion.		
	12. Vegetation clearance should be phased to ensure that the		
	minimum area of soil is exposed to potential erosion at any one		
	time.		
	13. Re-vegetation of disturbed surfaces should occur immediately		
	after construction/prospecting activities are completed. This		
	should be done through seeding with indigenous grasses.		
	14. No impediment to the natural water flow other than approved		
	erosion control works is permitted.		
	15. To prevent stormwater damage, the increase in stormwater run-		
	off resulting from construction/prospecting activities must be		
	estimated and the drainage system assessed accordingly. A		
	drainage plan must be submitted to the Engineer for approval and		
	must include the location and design criteria of any temporary		
	stream crossings.		
	16. Stockpiles not used in three (3) months after stripping must be		
	seeded/backfilled to prevent dust and erosion.		
. Air Pollution	Dust control	Duration of operation	The implementation of the
	1. Wheel washing and damping down of un-surfaced and un-		recommended mitigation measures
	vegetated areas.		will result in the minimisation of
	2. Retention of vegetation where possible will reduce dust travel.		impacts to acceptable standards,
			thereby ensuring compliance with

	 Clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas. Damping down of all exposed soil surfaces with a water bowser or sprinklers when necessary to reduce dust. 		NEMA and Duty of Care as prescribed by NEMA.
	 The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the neighbouring communities. A speed limit of 30km/h must not be exceeded on site. Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor. Any dirt roads that are utilised by the workers must be regularly maintained to ensure that dust levels are controlled. 		
	 Odour control 9. Regular servicing of vehicles in order to limit gaseous emissions. 10. Regular servicing of onsite toilets to avoid potential odours. 		
	 Rehabilitation 11. The Contractor should commence rehabilitation of exposed soil surfaces as soon as practical after completion of earthworks. 		
	 Fire prevention 12. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires. 13. The Contractor shall have operational fire-fighting equipment 		
	available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.		
Noise	 The prospecting activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development. 	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards,
	2. Pans, power plants, crushers, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the		thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

Contractor(s), the sites must be evaluated in detail and specific	
measures designed in to the system.	
3. Truck traffic should be routed away from noise sensitive areas,	
where possible.	
4. Noise levels must be kept within acceptable limits.	
5. Noisy operations should be combined so that they occur where	
possible at the same time.	
6. Mine workers to wear necessary ear protection gear.	
7. Noisy activities to take place during allocated hours.	
8. Noise from labourers must be controlled.	
9. Noise suppression measures must be applied to all equipment.	
Equipment must be kept in good working order and where	
appropriate fitted with silencers which are kept in good working	
order. Should the vehicles or equipment not be in good working	
order, the Contractor may be instructed to remove the offending	
vehicle or machinery from the site.	
10. The Contractor must take measures to discourage labourers from	
loitering in the area and causing noise disturbance. Where	
possible labour shall be transported to and from the site by the	
Contractor or his Sub-Contractors by the Contractors own	
transport.	
11. Implementation of enclosure and cladding of processing plants.	
12. Applying regular and thorough maintenance schedules to	
equipment and processes. An increase in noise emission levels	
very often is a sign of the imminent mechanical failure of a	
machine.	

Impact on potential	1. Any finds must be reported to the nearest National Monuments	Duration of operation	The implementation of the
cultural, heritage artefacts	office to comply with the National Heritage Resources Act (Act No		recommended mitigation measures
and fossils.	25 of 1999) and to DEA.		will result in the minimisation of
	2. Local museums as well as the South African Heritage Resource		impacts to acceptable standards,
	Agency (SAHRA) should be informed if any artefacts/ fossils are		thereby ensuring compliance with
	uncovered in the affected area.		NEMA and Duty of Care as prescribed
	3. The Contractor must ensure that his workforce is aware of the		by NEMA.
	necessity of reporting any possible historical, archaeological or		
	palaeontological finds to the ECO so that appropriate action can		
	be taken.		
	4. Known sites should be clearly marked in order that they can be		
	avoided. The workeforce should also be informed that fenced-off		
	areas are no-go areas.		
	5. The ECO must also survey for heritage and palaeontological		
	artefacts during ground breaking and digging or drilling. He/she		
	should familiarise themselves with formations and its fossils or a		
	palaeontologist should be appointed during the digging and		
	excavation phase of the development.		
	6. All digging, excavating, drilling or blasting activities must be		
	stopped if heritage and/or palaeontological artefacts are		
	uncovered and a specialist should be called in to determine proper		
	management, mitigation, excavation and/or collecting measures.		
	7. Any discovered artefacts or fossils shall not be removed under		
	any circumstances. Any destruction of a site can only be allowed		
	once a permit is obtained and the site has been mapped and		
	noted. Permits shall be obtained from SAHRA should the		
	proposed site affect any world heritage/palaeontology sites or if		
	any heritage/palaeontology sites are to be destroyed or altered.		
	8. Under no circumstances shall any artefacts be removed,		
	destroyed or interfered with by anyone on the site; and contractors		
	and workers shall be advised of the penalties associated with the		
	unlawful removal of cultural, historical, archaeological or		
	palaeontological artefacts, as set out in the NHRA (Act No. 25 of		
	1999), Section 51. (1).		

Waste Management		Litter management	Duration of operation	The implementation of the
	1.	Refuse bins must be placed at strategic positions to ensure that	· · · · · · · · · · · · · · · · · · ·	recommended mitigation measures
		litter does not accumulate within the construction/prospecting site.		will result in the minimisation of
	2.			impacts to acceptable standards,
		not available and all solid waste collected shall be disposed of at		thereby ensuring compliance with
		registered/licensed landfill.		NEMA and Duty of Care as prescribed
	3.	Good housekeeping practices should be implemented to regularly		by NEMA.
		maintain the litter and rubble situation on the		
		construction/prospecting site.		
	4.	If possible and feasible, all waste generated on site must be		
		separated into glass, plastic, paper, metal and wood and recycled.		
		An independent contractor can be appointed to conduct this		
		recycling.		
	5.	Littering by the employees of the Contractor shall not be allowed		
		under any circumstances. The ECO shall monitor the neatness of		
		the work sites as well as the Contractor campsite.		
	6.	Skip waste containers should be maintained on site. These should		
		be kept covered and arrangements made for them to be collected		
		regularly.		
	7.	All waste must be removed from the site and transported to a		
		landfill site promptly to ensure that it does not attract vermin or		
		produce odours.		
	8.	Where a registered waste site is not available close to the		
		construction/prospecting site, the Contractor shall provide a		
		method statement with regard to waste management.		
	9.	A certificate of disposal shall be obtained by the Contractor and		
		kept on file, if relevant.		
		. Under no circumstances may solid waste be burnt on site.		
	11.	. All waste must be removed promptly to ensure that it does not		
		attract vermin or produce odours.		
		Hazardous waste		
	12	All waste hazardous materials must be carefully stored as advised		
		by the ECO, and then disposed of offsite at a licensed landfill site,		
		where practical. Incineration may be used where relevant.		
	13	. Contaminants to be stored safely to avoid spillage.		

14. Machinery must be properly maintained to keep oil leaks in check.	
15. All necessary precaution measures shall be taken to prevent soil	
or surface water pollution from hazardous materials used during	
construction/prospecting and any spills shall immediately be	
cleaned up and all affected areas rehabilitated.	
Sanitation	
16. The Contractor shall install mobile chemical toilets on the site.	
17. Staff shall be sensitised to the fact that they should use these	
facilities at all times. No indiscriminate sanitary activities on site	
shall be allowed.	
18. Toilets shall be serviced regularly and the ECO shall inspect	
toilets regularly.	
19. Toilets should be no closer than 50m or above the 1:100 year	
flood line from any natural or manmade water bodies or drainage	
lines or alternatively located in a place approved of by the	
Engineer.	
20. Under no circumstances may open areas, neighbours fences or	
the surrounding bush be used as a toilet facility.	
21. The construction of "Long Drop" toilets is forbidden, but rather	
toilets connected to the sewage treatment plant.	
22. Potable water must be provided for all construction staff.	
Remedial actions	
23. Depending on the nature and extent of the spill, contaminated soil	
must be either excavated or treated on-site.	
24. Excavation of contaminated soil must involve careful removal of	
soil using appropriate tools/machinery to storage containers until	
treated or disposed of at a licensed hazardous landfill site.	
25. The ECO must determine the precise method of treatment for	
polluted soil. This could involve the application of soil absorbent	
materials as well as oil-digestive powders to the contaminated	
soil.	
26. If a spill occurs on an impermeable surface such as cement or	
concrete, the surface spill must be contained using oil absorbent	
material.	

		 27. If necessary, oil absorbent sheets or pads must be attached to leaky machinery or infrastructure. 28. Materials used for the remediation of petrochemical spills must be used according to product specifications and guidance for use. 29. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment, and stored in adequate containers until appropriate disposal.
Water Use and Quality	Water pollution	 Water Use Develop a sustainable water supply management plan to minimise the impact to natural systems by managing water use, avoiding depletion of aquifers and minimising impacts to water users. Water must be reused, recycled or treated where possible. Water Quality The quality and quantity of effluent streams discharged to the environment including stormwater should be managed and treated to meet applicable effluent discharge guidelines. Discharge to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria outside a scientifically established mixing zone. Efficient oil and grease traps or sumps should be installed and maintained at refueling facilities, workshops, fuel storage depots, and containment areas and spill kits should be available with emergency response plans.
		 Stormwater 6. The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids and silt or chemical pollutants. 7. Silt fences should be used to prevent any soil entering the stormwater drains. 8. Temporary cut off drains and berms may be required to capture stormwater and promote infiltration.

9.	Promote a water saving mind set with construction/prospecting	
	workers in order to Contractor ensure less water wastage.	
10.	. New stormwater construction must be developed strictly	
	according to specifications from engineers in order to ensure	
	efficiency.	
11.	. Hazardous substances must be stored at least 20m from any	
	water bodies on site to avoid pollution.	
12.	. The installation of the stormwater system must take place as soon	
	as possible to attenuate stormwater from the construction phase	
	as well as the operation phase.	
13.	. Earth, stone and rubble is to be properly disposed of, or utilized	
	on site so as not to obstruct natural water path ways over the site.	
	i.e. these materials must not be placed in stormwater channels,	
	drainage lines or rivers.	
14.	. There should be a periodic checking of the site's drainage system	
	to ensure that the water flow is unobstructed.	
15.	. If a batching plant is necessary, run-off should be managed	
	effectively to avoid contamination of other areas of the site.	
	Untreated runoff from the batch plant must not be allowed to get	
	into the storm water system or nearby streams, rivers or erosion	
	channels or dongas.	
	Groundwater resource protection	
16.	. Process solution storage ponds and other impoundments	
	designed to hold non fresh water or un-treated process effluents	
	should be lined and be equipped with sufficient wells to enable	
	monitoring of water levels and quality.	
	Sanitation	
17.	. Adequate sanitary facilities and ablutions must be provided for	
	construction workers (1 toilet per every 15 workers).	
18.	. The facilities must be regularly serviced to reduce the risk of	
	surface or groundwater pollution.	
	Concrete mixing	

19. Concrete contaminated water must not enter soil or any natural drainage system as this disturbs the natural acidity of the soil and affects plant growth.
Public areas 20. Food preparation areas should be provided with adequate washing facilities and food refuse should be stored in sealed refuse bins which should be removed from site on a regular basis. 21. The Contractor should take steps to ensure that littering by construction workers does not occur and persons should be employed on site to collect litter from the site and immediate surroundings, including litter accumulating at fence lines. 22. No washing or servicing of vehicles on site.

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

- G) MONITORING OF IMPACT MANAGEMENT ACTIONS
- H) MONITORING AND REPORTING FREQUENCY
- I) RESPONSIBLE PERSONS
- J) TIME PERIOD FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS

K) MECHANISM FOR MONITORING COMPLIANCE
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SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Clearance of vegetation	Loss or fragmentation of habitats	 Conduct regular internal audits Conduct regular external audits 	 Environmental Manager Suitable qualified environmental auditor 	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.
Prospecting of the applied for minerals – drilling	Loss of topsoil Erosion Air Pollution Noise Impact on potential cultural, heritage artefacts and fossils	 Conduct regular internal audits Conduct regular external audits 	 Environmental Manager Suitable qualified environmental auditor 	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.
Waste management	Pollution	 Conduct regular internal audits Conduct regular external audits 	 Environmental Manager Suitable qualified environmental auditor 	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably

				qualified auditor on an annual basis. Reports should be made available to the competent authority if required.
Water Use and Quality	Water pollution	 Conduct regular internal audits Conduct regular external audits 	 Environmental Manager Suitable qualified environmental auditor 	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.

L) CATE THE FREQUENCY OF THE SUBMISSION OF THE PERFORMANCE ASSESSMENT REPORT.

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

M) ENVIRONMENTAL AWARENESS PLAN

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

Kimswa Mining (Pty) Ltd will implement an Environmental Awareness Plan which will include various mechanisms for informing employees of environmental risks resulting from their work, including:

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

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

See the attached **Appendix 11** for the Awareness plan

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

Kimswa Mining (Pty) Ltd will implement an incident reporting and reporting procedure in order to identify risks timeously and implement actions to avoid or minimise environmental impacts.

N) SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

(Among others, Confirm that the financial provision will be reviewed annually).

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

-END-