mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

PROSPECTING RIGHT APPLICATION OF DIAMONDS ALLUVIAL & DIAMONDS GENERAL NEAR WINDSORTON ON THE FARM SLYPKLIP SOUTH ESTATE 36, SLYPKLIP SOUTH 33 AND MORGENZON 35, REGISTRATION DIVISION KIMBERLEY, NORTHERN CAPE PROVINCE.

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

NAME OF APPLICANT	**Vincent John Lewis**
COMPILED BY	**Milnex 189 CC**
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FILE REFERENCE NUMBER SAMRAD:	**NC30/5/1/1/2/11880PR**

CLAUSE

This report has been compiled by Milnex 189 CC, using information provided by **Vincent John Lewis** 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.

OBJECTIVE OF THE SCOPING PROCESS

1) The objective of the scoping process is to, through a consultative process—

(a) identify the relevant policies and legislation relevant to the activity;

(b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;

(c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;

(d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;

(e) identify the key issues to be addressed in the assessment phase;

(f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and

(g) identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

———————

SCOPING REPORT

2) Contact Person and correspondence address

a) Details of:

i) The EAP who prepared the report

Name of Practitioner: Danie Labuschagne

Tel No.: (018) 011 1925

Fax No. : (053) 963 2009

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

Name of Practitioner: Percy Sehaole

Tel No.: (018) 011 1925

Fax No. : (053) 963 2009

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

ii) Expertise of the EAP.

(1) **The qualifications of the EAP**
(With evidence attached as **Appendix 1**).

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

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

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

Milnex 189 CC was contracted by Vincent John Lewis. as the independent environmental consultant to undertake the Scoping and EIA process for a prospecting right of Diamonds Alluvial & Diamonds General near Windsorton on the farm Slypklip South Estate 36, Slypklip South 33 and Morgenzon 35, Registration Division Kimberley, Northern Cape Province. Milnex 189 CC does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

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

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

b) **Description of the property.**

Farm Name:	1. Portion 1 (Slypklip Siding) of the farm Slypklip South Estate 36; Registration Division: Kimberley RD Extent: 329.0810 hectares Title Deed: T1680/2002 Province: Northern Cape 2. Portion 2 (Middelpunt) of the farm Slypklip South Estate 36; Registration Division: Kimberley RD Extent: 471.5680 hectares Title Deed: T1678/2015 Province: Northern Cape 3. Portion 3 (Braklaagte) of the farm Slypklip South Estate 36; Registration Division: Kimberley RD Extent: 546.2076 hectares Title Deed: T5856/1996 Province: Northern Cape 4. Portion 8 of the farm Slypklip South Estate 36; Registration Division: Kimberley RD Extent: 26.0495 hectares Title Deed: T1678/2015 5. Portion 9 of the farm Slypklip South Estate 36, Registration Division: Kimberley RD Extent:73.1059 hectares Title Deed: T4476/2011 6. Remaining extent of portion 4 (Eiland Hoek) of the farm Slypklip South 33, Registration Division: Kimberley RD Extent: 148.9107 hectares Title Deed: 2002/2014 7. Portion 5 (Gras vlakte) of the farm Slypklip South 33, Registration Division: Kimberley RD Extent: 213.2650 hectares Title Deed: T784/1989 8. Portion 6 (vervanhier) of the farm Slypklip South 33 Registration Division: Kimberley RD

	Extent: 101.3335 hectares Title Deed: T1678/2015 9. Portion 10 of the farm Slypklip South 33 Registration Division: Kimberley RD Extent: 40.2507 hectares Title Deed: T2331/1997 10. Portion 11 (portion of portion 11) of the farm Slypklip South 33 Registration Division: Kimberley RD Extent: 21.5277 hectares Title Deed: T1678/2015 11. The farm Morgenzon 35 Registration Division: Kimberley RD Extent: 1391.4837 hectares Title Deed: T564/1999
Application area (Ha)	3362.7833 hectares
Magisterial district:	Kimberley
Distance and direction from nearest town	The property is located approximately 15km South East of Windsorton in the Northern Cape Province.
21 digit Surveyor General Code for each farm portion	1. C03700000000003600001 2. C03700000000003600002 3. C03700000000003600003 4. C03700000000003600008 5. C03700000000003600009 6. C03700000000003600000 7. C03700000000003300005 8. C03700000000003300006 9. C03700000000003300011 10. C03700000000003300010 11. C03700000000001990000

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.

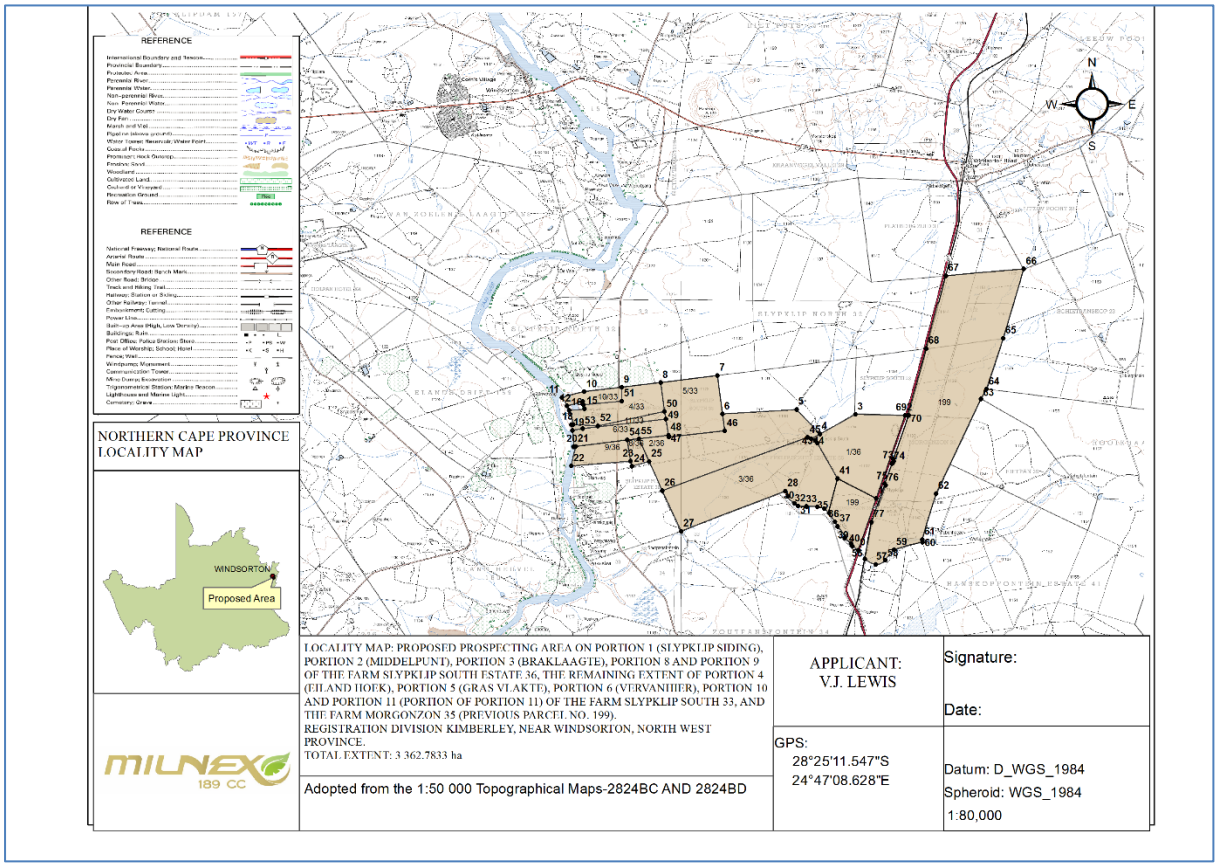


Figure 1: Locality Map

Farms Co-ordinates:

Coordinates	X	Y	X2	Y2
0	24° 47' 39.565"" E	28° 26' 40.051"" S	24.79432353	-28.44445862
1	24° 47' 55.766"" E	28° 25' 53.383"" S	24.79882376	-28.4314954
2	24° 48' 21.693"" E	28° 24' 38.658"" S	24.8060258	-28.41073846
3	24° 47' 37.023"" E	28° 24' 37.909"" S	24.79361745	-28.41053016
4	24° 47' 4.923"" E	28° 24' 55.439"" S	24.78470096	-28.4153998
5	24° 46' 43.949"" E	28° 24' 33.518"" S	24.77887482	-28.40931064
6	24° 45' 37.120"" E	28° 24' 37.529"" S	24.760311	-28.41042462
7	24° 45' 32.617"" E	28° 24' 2.761"" S	24.75906015	-28.40076703
8	24° 44' 41.494"" E	28° 24' 9.211"" S	24.74485949	-28.40255872
9	24° 44' 6.411"" E	28° 24' 13.469"" S	24.73511404	-28.40374152
10	24° 43' 32.394"" E	28° 24' 17.482"" S	24.72566511	-28.40485609
11	24° 43' 12.235"" E	28° 24' 22.594"" S	24.72006533	-28.40627614
12	24° 43' 17.012"" E	28° 24' 30.291"" S	24.72139234	-28.40841407
13	24° 43' 31.157"" E	28° 24' 26.376"" S	24.72532131	-28.40732662
14	24° 43' 31.730"" E	28° 24' 29.197"" S	24.72548053	-28.40811015
15	24° 43' 32.846"" E	28° 24' 32.760"" S	24.7257906	-28.40910006
16	24° 43' 18.982"" E	28° 24' 34.157"" S	24.72193934	-28.40948803
17	24° 43' 22.682"" E	28° 24' 47.084"" S	24.72296731	-28.41307889
18	24° 43' 20.789"" E	28° 24' 46.944"" S	24.72244129	-28.41303989
19	24° 43' 21.800"" E	28° 24' 52.135"" S	24.72272227	-28.41448182
20	24° 43' 22.822"" E	28° 25' 6.934"" S	24.72300619	-28.41859265
21	24° 43' 24.745"" E	28° 25' 6.732"" S	24.72354022	-28.41853666

22	24° 43' 20.896"" E	28° 25' 24.306"" S	24.72247107	-28.42341842
23	24° 44' 14.221"" E	28° 25' 19.995"" S	24.73728374	-28.42222072
24	24° 44' 15.402"" E	28° 25' 24.638"" S	24.73761173	-28.42351067
25	24° 44' 30.977"" E	28° 25' 20.236"" S	24.74193794	-28.42228779
26	24° 44' 42.943"" E	28° 25' 46.429"" S	24.74526194	-28.42956352
27	24° 44' 59.820"" E	28° 26' 22.942"" S	24.74994994	-28.43970613
28	24° 46' 33.713"" E	28° 25' 46.783"" S	24.77603129	-28.42966204
29	24° 46' 35.975"" E	28° 25' 51.483"" S	24.77665985	-28.43096756
30	24° 46' 41.984"" E	28° 25' 58.078"" S	24.77832888	-28.43279937
31	24° 46' 45.295"" E	28° 26' 0.331"" S	24.77924868	-28.43342538
32	24° 46' 52.921"" E	28° 26' 0.694"" S	24.78136704	-28.43352608
33	24° 47' 2.619"" E	28° 26' 1.073"" S	24.7840609	-28.43363152
34	24° 47' 9.094"" E	28° 26' 2.796"" S	24.78585952	-28.43411
35	24° 47' 13.087"" E	28° 26' 6.695"" S	24.78696864	-28.43519296
36	24° 47' 18.627"" E	28° 26' 14.681"" S	24.78850741	-28.43741142
37	24° 47' 20.890"" E	28° 26' 18.687"" S	24.78913624	-28.43852421
38	24° 47' 27.296"" E	28° 26' 28.970"" S	24.7909156	-28.44138043
39	24° 47' 32.823"" E	28° 26' 33.854"" S	24.7924509	-28.4427373
40	24° 47' 34.175"" E	28° 26' 36.688"" S	24.79282637	-28.44352452
41	24° 47' 20.886"" E	28° 25' 35.563"" S	24.78913493	-28.42654539
42	24° 47' 2.712"" E	28° 25' 3.817"" S	24.78408661	-28.41772698
43	24° 47' 0.552"" E	28° 25' 1.010"" S	24.78348668	-28.41694722
44	24° 46' 57.183"" E	28° 24' 59.712"" S	24.78255084	-28.41658672
45	24° 46' 53.783"" E	28° 24' 58.618"" S	24.78160627	-28.4162827
46	24° 45' 39.134"" E	28° 24' 52.752"" S	24.76087055	-28.4146533
47	24° 44' 48.781"" E	28° 24' 58.057"" S	24.74688364	-28.41612681
48	24° 44' 48.524"" E	28° 24' 56.420"" S	24.74681229	-28.41567217
49	24° 44' 46.242"" E	28° 24' 42.017"" S	24.74617836	-28.41167134
50	24° 44' 44.899"" E	28° 24' 35.249"" S	24.74580538	-28.40979141
51	24° 44' 6.303"" E	28° 24' 25.873"" S	24.73508421	-28.40718706
52	24° 43' 44.880"" E	28° 24' 48.253"" S	24.72913332	-28.4134035
53	24° 43' 31.048"" E	28° 24' 50.614"" S	24.72529106	-28.41405954
54	24° 44' 11.356"" E	28° 25' 0.883"" S	24.73648783	-28.41691193
55	24° 44' 21.811"" E	28° 24' 59.864"" S	24.73939196	-28.416629

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

i) Listed and specified activities

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site and attach as **Appendix 4**

Refer to Site Plan included within **Appendix 4**.

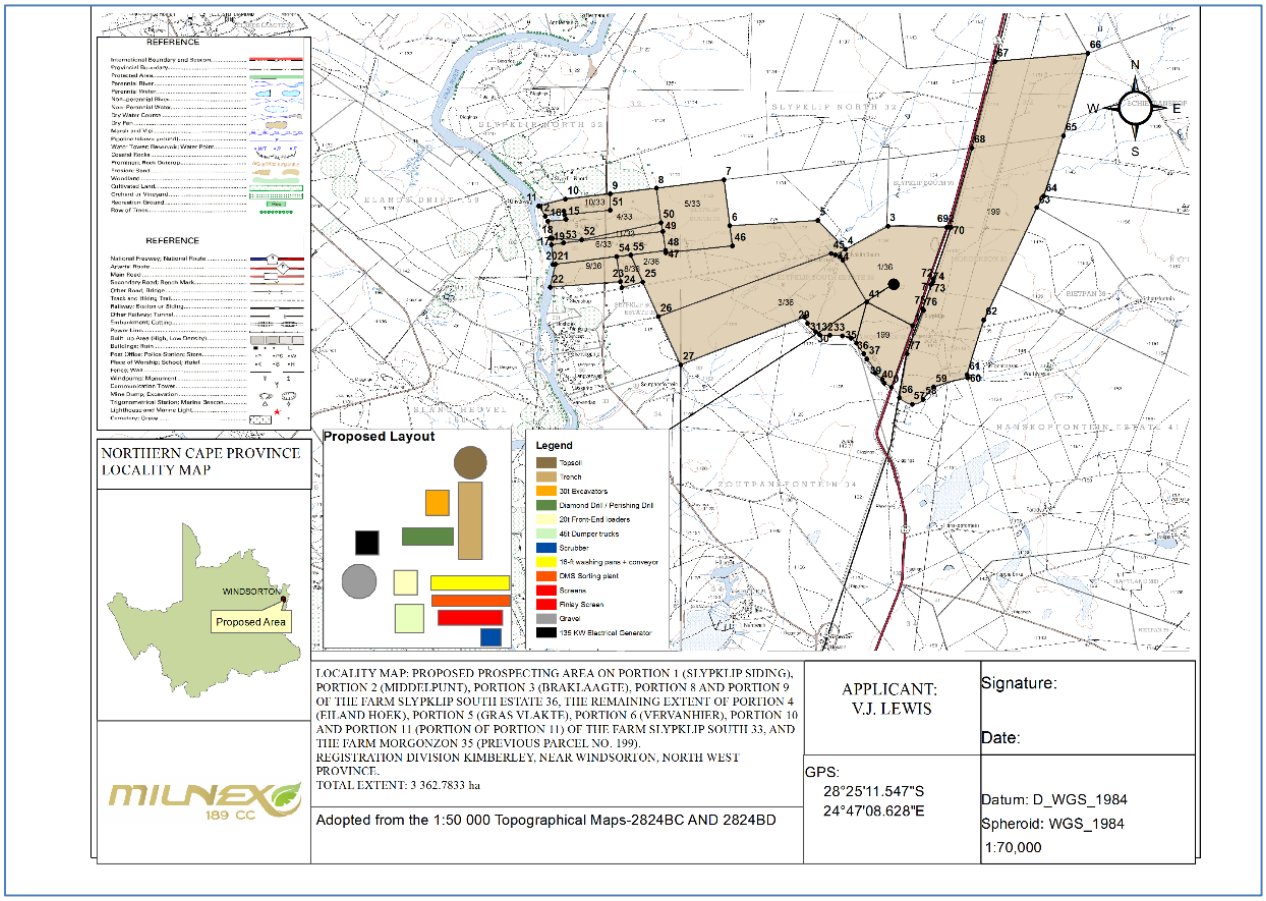


Figure 2: Site Layout Map

NAME OF ACTIVITY (All activities including activities not listed) (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**Aerial extent of the Activity Ha or m²**	**LISTED ACTIVITY Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE (*GNR 983, GNR 984 or GNR 985)/NOT LISTED***
Clearance of indigenous vegetation	3362.7833 ha - Only the areas where prospecting takes place, will be cleared. Concurrent backfilling will take place in order to rehabilitate.	X	GNR. 984
Office and Workshop	50m²	-	-
Roads	+- 4 km	-	-
Stockpiling op topsoil	3362.7833 ha – 50m x 20m x 5m x 50 = 250 000m³	-	-

Prospecting of Diamond Alluvial - Excavations	3362.7833 ha – 3m x 2m x 5m pit (200 pits), 50m x 20m x 5m trench (50 trenches)	X	GNR. 984
Processing Plant	2 x 16 Ft Pan with Conveyor – 180 000 tons to be washed	X	-

Listing Notices:

Description of the overall activity. **(Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)**	*1*. **Listing Notice GNR 984, Activity 15:**"The clearance of an area of 20 hectares or more, of indigenous vegetation." – Random indigenous vegetation clearance of over a 3362.7833-hectare area. 2. **Listing Notice GNR 984, Activity 19:** "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resource4s Development Act (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, 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)" – Prospecting right with bulk samples for the prospecting of Diamond Alluvial, Diamond General, including associated infrastructure, structure and earthworks. 3. **Listing Notice GNR 984, Activity 21:** "Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies." 4. **Listing Notice GNR 983, Activity 20:** "Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource…" – Prospecting right with bulk samples for the mining of Diamond Alluvial and Diamond General, including associated infrastructure, structure and earthworks.

ii) Description of the activities to be undertaken

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

Phase 1 – Site Visit

A site visit will be conducted within 3 months after execution of the Prospecting Right. It is envisaged that the information will be obtained from the site visit to do the desktop studies and other prospecting activities.

Phase 2 – Desktop studies

Desktop studies will be undertaken after the site investigation has was done to determine the target areas including the identification of any infrastructure to be build and any potential problems that may need to be addressed.

Phase 3 – Pitting

The information obtained from the desktop studies will be used to draw up a pitting map. The location and GPS coordinates of where pits will be dug, will be indicated on this map (pitting location map). Pits will then be dug by an excavator on these mapped coordinated points. If gravel is found the applicant will determine the composition and quality of the gravel. It is envisaged that the pits will determine the location and intersection of mineralization.

It is envisaged that 100 pits will be dug. It may be less depending on results.

3362.7833Ha- 3m x 2m x 5m pit (200 pits). It is planned that only 40 pits will be excavated in the first year, but it may be more if the process is quicker than planned for. It should be kept in mind that no more than 200 pits will be excavated.

The total area to be disturbed a year will be- 40 pits x (3m x2m) = 0.024Ha per year

Phase 4 – Trenches

The applicant will proceed with this way of prospecting by means of the open cast / trenching method, during and or after pitting and depending on the results. The location where the trenches will be dug, will be determined after the gravel has been located by conducting the desktop studies and the digging of pits. The trenches will be dug on the parts of the property where the gravel is located. Trenches will be sited on the resource map according to the coordinate of each of the trenches made. The trenches will be dug to remove and wash the gravel. It will be washed by a washing pan to determine diamond proceeds per 100 ton of gravel. The trenches will be sited to determine the geological representivity. Overburden will be stripped and placed next to the trench as determined in the EMP. Gravel will be removed and transported to the plant to be washed. Tailings will be returned to the excavation to fill it up. Hereafter overburden will be dumped in the excavation where after topsoil will be placed in the excavation.

3362.7833Ha- 50m x 20m x 5m trench (50 Trenches). It is planned that only 10 trenches will be excavated in the first year, but it may be more if the process is quicker than planned for. It should be kept in mind that no more than 50 trenches will be excavated.

The total area to be disturbed a year will be- 10 trenches x (50m x20m) = 1 Ha per year. No more than 1.024ha will be left as un-rehabilitated in two years. Rehabilitation will be done concurrently.

Phase 5 – Consolidation and interpretation

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. Each phase of prospecting will be followed by desktop studies involving interpretation and modelling of all data gathered and how the applicant will proceed with the work program in terms of activity, quantity, resources expenditures and duration. A pre-feasibility study will be done to determine the preliminary economic assessment of the resource and to determine whether additional evaluation of the deposit will be warranted to increase confidence in the resource estimation. Prospecting work will be conducted by a multi-disciplinary team to determine whether the resource can be viable exploited and if the results can support an application for a mining right.

Phase 5 – Rehabilitation and Closure

- Remove all prospecting related infrastructure
- Return tailings and overburden to the excavation in order to fill up the excavation.
- Place topsoil on top of the backfilled excavation.
- Rehabilitate disturbed areas appropriately

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 (a)(b) of NWA
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)
Frances Baard District Municipality Integrated Development Plan (IDP)	-
Magareng Local Municipality Integrated Development Plan (IDP) Review	-

Sol Plaatjie Local Municipality Integrated Development Plan (IDP) Review	-

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).

Prospecting rights and mining permits have been applied for all around the proposed site, 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) **Period for which the environmental authorisation is required.**

The environmental authorisation is required for a minimum period of 10 years.

h) **Description of the process followed to reach the proposed preferred site.**
NB!! – This section is not about the impact assessment itself; It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout as a result.

Each of the phases are dependent on the results of the preceding phase. The location and extent of soil sampling, and possible diamond bulk sampling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, the overall prospecting area is presented in **Appendix 3**.

The stakeholder consultation phase has not been completed at this time, and therefore the comments raised by I&APs have not been incorporated in this section. This will be updated as part of the final report.

i) Details of all alternatives considered.
With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:
(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

(a) The property on which or location where it is proposed to undertake the activity

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, the possibility to encounter further Diamond Reserves on the farm Slypklip South Estate 36, Slypklip South 33 and Morgenzon 35 were identified.

Furthermore, no other properties have been secured by the applicant, Vincent John Lewis.

(b) The type of activity to be undertaken

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

(c) The design or layout of the activity

The location of the activities will be determined based on the location of the prospecting activities, which will only be determined during phase 1 and 2 of the Prospecting Work Programme (see **Appendix 9** for the Programme). The proposed area consist of graves, excavated areas, dams, non-perennial rivers and streams like the Leeu River contributing to the Vaal River, and farm infrastructure. Infrastructure includes central pivot irrigation systems, fences, water troughs, houses, pipes, powerlines (Eskom), roads, etc. The proposed area is also adjacent to the Slypklip train station and Vaal River. Where applicable a Water Use License Application will be launched for conducting prospecting operations. All infrastructure will be temporary and/or mobile.

(d) The technology to be used in the activity

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 mining activity, will be to remove the diamond bearing gravel with an excavator, depositing it in the 10 – 18 feet rotary pan(s) to be washed and sorted. Please find the Prospecting Work Programme attached as **Appendix 9**.

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

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

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

Pros & Cons of the alternative **Rotary Pan Plants**

Advantages	**Disadvantages**
More cost effective	The industry perception that Rotary Pan Plants yield poorer diamond recoveries
Readily available	
Generate more work opportunities	
Consume less water	
Rotary Pan Plants are most often used when mining alluvial deposits	

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

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

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 have harm to humans or animals)	Not Hazardous or toxic. 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.

(e) The operational aspects of the activity

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

The activities will commence with a site investigation and desktop studies, which will comprise of non-invasive techniques. This manner of survey will ensure that the applicant can clearly delineate areas which are suitable for further investigation and no unnecessary surface disturbance will be undertaken.

Based on the outcome of the desktop studies and site investigation, pits will be dug by an excavator for the purpouse of soil sampling. If gravel is found, the applicant wil determine the composition and quality of the gravel.

The applicant will proceed with this way of prospecting by means of the open cast/trenching method, simultaneously or after pitting depending on the information obtained from the earlier work done. The trenches will be dug to remove and wash the gravel. It will be washed by a washing pan to determine diamond proceeds per 100 tons of gravel.

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

No feasible alternatives to the pitting and trenching method currently exists. Impacts associated with the prospecting operations will be managed through the implementation of a management plan, developed as part of the application for authorisation.

(f) The option of not implementing the activity

The option of not approving the activities will result in a significat loss of valuable information regarding the mineral status (in terms of diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utalize these reserves for future phases will be lost.

ii) Details of the Public Participation Process Followed

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

1. Advertisement and Notices

Newspaper advertisement

An advertisement will be placed in English in the local newspaper (Noordkaap newspaper) on 02 November 2016 (see **Appendix 6**) notifying the public of the EIA process and requesting Interested and Affected Parties (I&APs) to register with, and submit their comments to Milnex

189 CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement.

Site notices

Site notices was be placed on site in English on the 01 November 2016 to inform surrounding communities and immediately adjacent landowners of the proposed development. I&APs were given the opportunity to raise comments by 1 December 2016. Photographic evidence of the site notices is included in **Appendix 6**. Two site notices were placed on the co-ordinates depicted by the picture below.

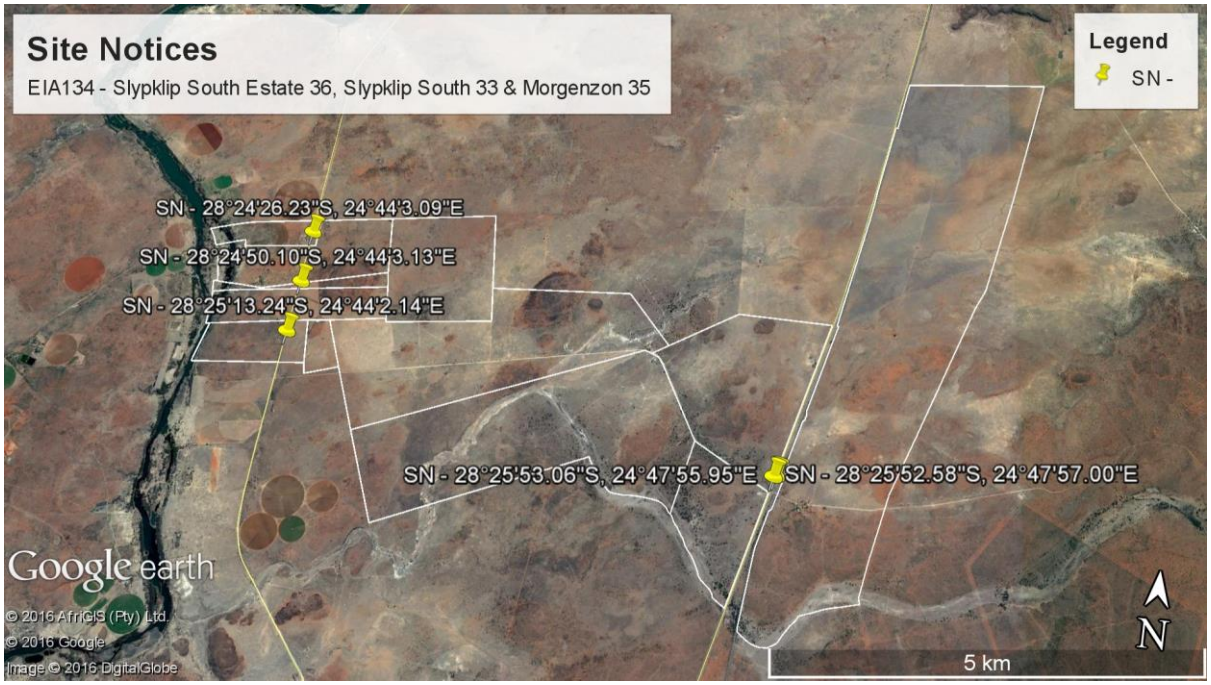


Figure 3: Location of site notices

Direct notification and circulation of Scoping 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 Scoping Report via registered post on 27 October 2016 and were requested to submit comments by 28 November 2016. A copy of this report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Thursdays and between 7:30AM and 4PM on Fridays. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**. The consultees included:

- Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)
- The Department of Water and Sanitation
- The Department of Mineral Resources
- NC Department of Agriculture, forestry and fisheries (DAFF)
- Ngwao-Boswa Ya Kapa Bokone (NBKB) Provincial Heritage Resources Authority of the Northern Cape
- SANRAL (Western Region)
- The Wildlife and Environment Society of South Africa (WESSA)
- Department of Roads and Public Works (DRPW)
- The Frances Baard District Municipality

- The Municipal Manager at the Magareng Local Municipality
- The Municipal Manager at the Sol Plaatjie Local Municipality
- The Local Councilor at the Magareng Local Municipality
- The Local Councilor at the Sol Plaatjie Local Municipality
- NC Department of Rural Development & Land Reform: Land Restitution Support

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

Direct notification of surrounding land owners and occupiers

Written notices and the availability of the Scoping Report are also provided to all surrounding land owners and occupiers on 27 October 2016. The surrounding land owners are given the opportunity to raise comments by 28 November 2016. For a list of surrounding land owners see **Appendix 6**.

12. Consultation

All I&AP's are invited to attend the public meeting scheduled for **17 November 2016 at 08:30am–09:30am** on the N12 adjacent the proposed application area, between Windsorton and Kimberley. Please indicate on the comments and response form if you wish to attend the Public Meeting. The coordinates and directions (figure1) of the public meeting follows below.

Coordinates
27°42'34.64"S
25°33'47.69"E

Directions from Windsorton

- Coming from Windsorton head east on the R374 towards the N12.
- Turn right on the N12
- Continue on the N12 for approximately 10km and look out for the Slypklip board, where Milnex personnel will be waiting next to the road

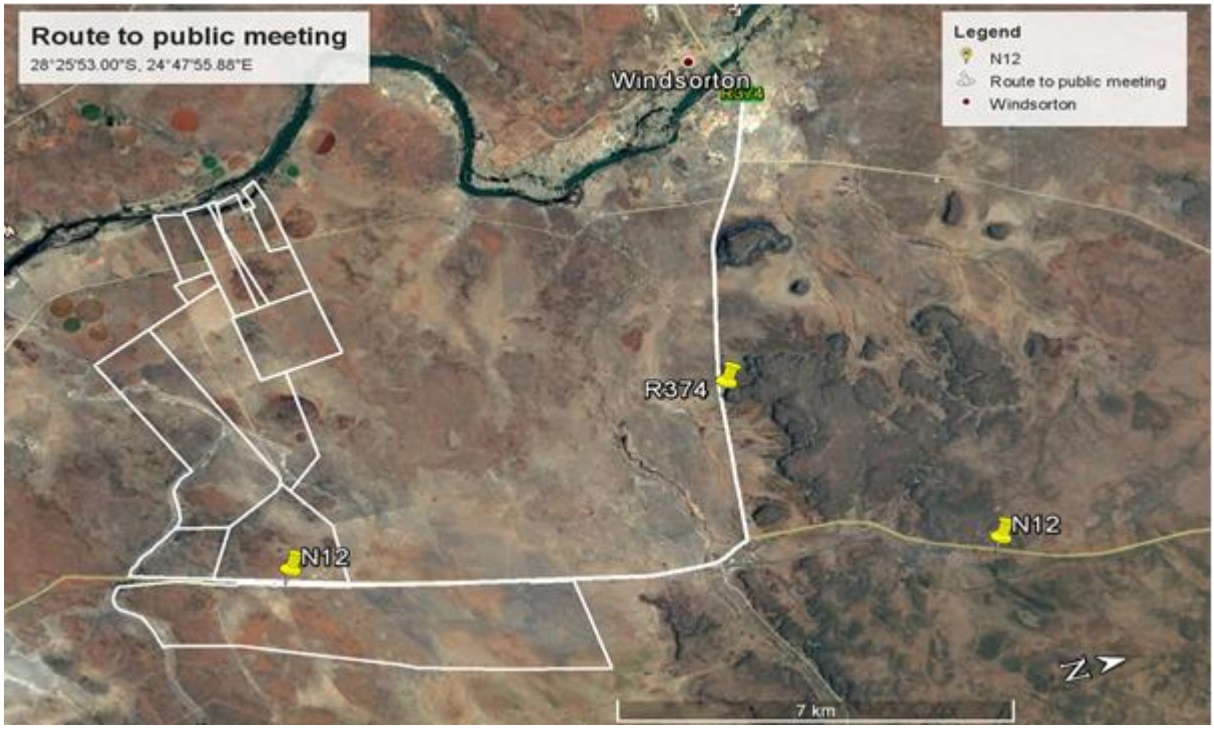


Figure 4: Directions from Windsorton to the public meeting

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 are also directly informed of the public meeting via registered post 21 September 2016:

- Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)
- The Department of Water and Sanitation
- The Department of Mineral Resources
- NC Department of Agriculture, forestry and fisheries (DAFF)
- Ngwao-Boswa Ya Kapa Bokone (NBKB) Provincial Heritage Resources Authority of the Northern Cape
- SANRAL (Western Region)
- The Wildlife and Environment Society of South Africa (WESSA)
- Department of Roads and Public Works (DRPW)
- The Frances Baard District Municipality
- The Municipal Manager at the Magareng Local Municipality
- The Municipal Manager at the Sol Plaatjie Local Municipality
- The Local Councilor at the Magareng Local Municipality
- The Local Councilor at the Sol Plaatjie Local Municipality
- NC Department of Rural Development & Land Reform: Land Restitution Support
- Fastvents Thirty Five CC
- PZK Beleggings 6300 CC
- Mrs Shirley Hauptfleisch
- Mr Mark Anthony Mackenzie
- Mr Nicolaas Stephanus Botha
- Mrs Janette Botha
- Uys Familie Boerdery Pty Ltd

- Mr Cornelius Johannes Lotter & Mrs Alida Maria De Villiers Lotter
- Ros Beef CC
- Kaapweg Motors CC
- Haywes Trust:Mr Brad Evan Potgieter
- Haywes Trust: Mr Darryl Preece
- Transnet Ltd
- Mr Nicolaas Stephanus Botha
- PZK Beleggings 6300 CC
- Delta Blue Trading 41 CC
- Mr Paul Matshomo
- Corns Family Trust: Mr Derek Soren Corns & Mrs Stephanie Engela Corns
- Stenque CC
- Mr Willem Hauptfleisch
- James Nieuwoudt Familie Trust
- Trust Info Not Available
- Pietdrey Pty Ltd

Public Meeting

The meeting was held on 17 November 2016 at 08:30am–09:30am on the N12 adjacent the proposed application area with the I&AP and stakeholders.

Coordinates
28°25'53.00"S
24°47'55.88"E

Directions from Windsorton

- Coming from Windsorton head east on the R374 towards the N12.
- Turn right on the N12
- Continue on the N12 for approximately 10km and look out for the Slypklip board, where Milnex personnel will be waiting next to the road

Objections and/or concerns raised

- Attendees states that they believe there is no more diamonds to mine, because there were big name that delved the area namely; Sonop delwery (Chirs Potgieter), Koot van Eden, Koosie Nel, Dion Sonnenberg, Neels van der Nest, Derick Corns, etc. They think the applicant is after the Lion river (Leeurivier), to look for diamonds. One of the attendees mentioned that De Beers mine flew over the area to look for minerals however they did not continue with the process since they said the diamonds are too deep. Apparently there was a geologist from Petra Diamonds on the property and he mentioned there are no diamonds.
- The attendees want to know where is the applicant going to get water? They said they don't even have enough water for their livestock. They would also like to know when are they going to rehabilitate? When are the trenches and pits going to be filled because they have already lost a few animals because of the lack of rehabilitation of pervious mining activities.
- Attendees mentioned that the miners does not care about the environment and don't rehabilitate leaving the farmer with the problem.

General

- Attendees want to know if they are going to be compensated for the pits and trenches the applicant wants to dig. Mr. Nico Botha said that the application should buy his farm if he want to prospect on his property.

3. 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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issue and or response where incorporated
Organisation	**Contact person**				
Land Owner					
Slypklip South Estate 1/36	Fastvents Thirty Five CC		No comments received yet	16/11/2016 – Mrs. Lizanne Esterhuizen emailed the Draft Scoping Report, Posted letter and public meeting minutes to Mr. Le Grange.	
		17/11/2016	Objection received from Mr. Le Grange.	17/11/2016 - Mr. Danie Labuschagne acknowledged Mrs. Le Grange's email.	
		24/11/2016	Another objection received from Mr. Le Grange.	24/11/2016 - Mr. Danie Labuschagne acknowledged Mrs. Le Grange's email.	
Slypklip South Estate 2/36, 8/36, Slypklip South 6/33 & 11/33	PZK Beleggings 6300 CC	8/11/2016	Letter received from PZK Beleggings 6300 CC (Mr. MA Louw) stating that he is not in favour of mining or prospecting activities on his properties.	8/11/2016 – Mr. Danie Labuschagne acknowledged Mr. M. A. Louw's email.	
Slypklip South Estate 3/36	Mrs Shirley Hauptfleisch		No comments received yet		
Slypklip South Estate 9/36	Mr Mark Anthony Mackenzie		No comments received yet		
Slypklip South RE/4/33, 10/33	Mr Nicolaas Stephanus Botha		No comments received yet		
Slypklip South 5/33	Mrs Janette Botha	2/11/2016	Letter received from Mrs. Janette Botha that she is not in favour of the application and any mineral and/or prospecting right.	2/11/2016 – Mr. Danie Labuschagne acknowledged Mrs. Janette Botha's email.	
Morgenzon 35	Not on searchworks		No comments received yet		
Landowners or lawful occupiers on adjacent properties					

Leeuw Poort 0/22, Platberg Zuid 1/31	Uys Familie Boerdery Pty Ltd		No comments received yet		
Schietpanskop RE/23	Mr Cornelius Johannes Lotter & Mrs Alida Maria De Villiers Lotter		No comments received yet		
Rooikraalfontein RE/24, Rietpan 5/39	Ros Beef CC		No comments received yet		
Platberg Zuid 0/31, Slypklip North 15/32	Kaapweg Motors CC		No comments received yet		
Slypklip South 1/33, Zoutpansfontein 0/34	Haywes Trust Mr Brad Evan Potgieter		No comments received yet		
	Haywes Trust Mr Darryl Preece		No comments received yet		
Slypklip South 2/33	Transnet Ltd		No comments received yet		
Slypklip South 9/33	Mr Nicolaas Stephanus Botha		No comments received yet		
Slypklip South Estate 0/36	PZK Beleggings 6300 CC		No comments received yet		
Slypklip South Estate 12/36	Delta Blue Trading 41 CC		No comments received yet		
Hanskopfontein 2/40	Mr Paul Matshomo		No comments received yet		
Elands Drift 3/159	Corns Family Trust Mr Derek Soren Corns & Mrs Stephanie Engela Corns		No comments received yet		
Farm 0/198	Stenque CC		No comments received yet		
Morgenzon 0/199	Mr Willem Hauptfleisch		No comments received yet		
Morgenzon 1/199	not on searchworks		No comments received yet		
Farm 1/198	Not on searchworks		No comments received yet		
Farm 38	not avail on searchworks		No comments received yet		
Slypklip South Estate 14/36	James Nieuwoudt Familie Trust		No comments received yet		
Slypklip South Estate 18/36	Not on Searchworks		No comments received yet		

Zoutpansfontein 23/34	Deed Search Not Avail.		No comments received yet		
Slypklip North 3/32	Trust Info Not Available		No comments received yet		
Slypklip North 19/32	Not On Searchworks		No comments received yet		
Hanskopfontein Estate 0/41, 4/41	Pietdrey Pty Ltd		No comments received yet		
The Municipality in which jurisdiction the development is located					
Magareng Local Municipality	Municipal Manager Lesley Mokwena		No comments received yet		
Sol Plaatjie Local Municipality	Municipal Manager Mr Goolam Akharwaray		No comments received yet		
Municipal councilor of the ward in which the site is located					
Magareng Local Municipality	Ward 5 Councillor		No comments received yet		
Sol Plaatjie Local Municipality	Ward 28 Councillor – Me. Reinette Liebenberg	16/11/2016	Me. Liebenberg requested access to the particular documents regarding the application.	16/11/2016 – Mr. Labuschagne emailed the requested Draft Scoping Report to Me. Liebenberg.	
Organs of state having jurisdiction					
Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)	Mrs. Doreen Werth		No comments received yet		
DMR Department of Mineral Resources, Northern Cape. (DMR)	DD Mine Environmental Management: Mr Selohela Oliphant Mr. Johannes Nematatani	08/11/2016	Acknowledgement of Environmental Authorisation Application.		
	Magadi Mogotlhe	21/11/2016	Application for prospecting right of Diamonds (Alluvial and General) has been accepted.		
Department of Water & Sanitation (DWS)	Mr. Abe Abrahams		No comments received yet		
DWS Kimberley	Mr. Abe Abrahams				

NC Department of Agriculture, Forestry and Fisheries (DAFF)	To whom it may concern		No comments received yet		
	Chief Forester Mrs J. Mans		No comments received yet		
Department of Roads and Public Works (DRPW)	HOD: Ms. Ruth Palm Mr Tshiamo Pitso				
Ngwao-Boswa Ya Kapa Bokone (NBKB) Provincial Heritage Resources Authority of the Northern Cape	Chairperson: Mr. Stanley Mckenzie				
SANRAL (Western Region)	To whom it may concern				
Northern Cape Department of Rural Development & Land Reform,	Land Claims Commissioner: Regional Offices Chief Director: Ms Mangalane Du Toit Ryan Oliver		28/10/2016 – Letter received confirming that no land claims exist.	Enquiry made by Me. Lizanne Esterhuizen, 27 October 2016, about possible land claims on applied for properties.	
Other–					
Frances Baard District Municipality	Municipal Manager: Mr. Z.M. Bogatsu		No comments received yet		
WESSA	Mr. John Wesson		No comments received yet		

iv) The Environmental attributes associated with the sites

(1) Baseline Environment

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

(a) Type of environment affected by the proposed activity.
(its current geographical, physical, biological, socio- economic, and cultural character).

Geology and Soils

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

The larvas are green to grey-green in colour. The non-amygdaloidal varieties occur within the study area. The amygdaloidal, which comprise quartz, agate, chalcedony and carnelian are a major source of the Vaal Rover agates. Stratigraphically the larvas belong to the Allenridge formation and represents the uppermost volcanic stage of the Ventersdorp Supergroup. Quartzites of the Bothaville formation which underlies the ilenridge formation, rarely outcrop within the study area and are usually exposed where alluvial diggings have removed the surficial deposits.

Ecological habitat and landscape features

The application area is next to the river. 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 will be applied for.

In terms of vegetation types, the proposed area falls within vegetation units SVk9 and SVk10, which is known as the Kuruman Thornveld and Kuruman Mountain Bushveld. Both vegetation types are part of the Eastern Kalahari Bushveld which is a sub-bioregion for the Savanna Biome. **See figure 5 below and appendix 7**

Kuruman Thornveld

According to Mucina and Rutherford (2006:519) the Kuruman Thornveld is distributed across the Northern Cape and North West Provinces. On flats from the vicinity of Postmasburg and Danielskuil (here west of the Kuruman Hills) in the south extending via Kuruman to Tsineng and Dewar in the north. This thornveld is situated on an altitude of 1 100–1 500 m.

Vegetation and landscape features can be described as flat rocky plains and some sloping hills with very well-developed, closed shrub layer and well-developed open tree stratum consisting of

Acacia erioloba. Mucina and Rutherford (2006:520) also states that the conservation of the Kuruman Thornveld is least threatened with a target of 16%. None are conserved in statutory conservation areas and only 2% are transformed. Erosion is very low.

Kuruman Mountain Bushveld

According to Mucina and Rutherford (2006:520) the Kuruman Mountain Bushveld is distributed across the Northern Cape and North West Provinces. From the Asbestos Mountains southwest and northwest of Griekwastad, along the Kuruman Hills north of Danielskuil, passing west of Kuruman town and re-emerging as isolated hill, i.e. Makhubung and the hills around Pomfret in the north. This bushveld is situated on an altitude of 1100m – 1800m.

Vegetation and landscape features can be described as rolling hills with generally gentle to moderate slopes and hill pediment areas with an open shrubveld with *Lebeckia macrantha* prominent in place, with well-developed grass layers. Mucina and Rutherford (2006:521) also states that the conservation of the Kuruman Mountain Bushveld is least threatened with a target of 16%. None are conserved in statutory conservation areas and very little are transformed. Erosion is very low to low, however some parts in the north are heavily utilised for grazing.

If protected tree species are identified on the proposed portions, 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 as stipulated under section 51(1) of the National Forests Act No. 84 of 1998.

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 will be applied for with the Northern Cape Department of Environmental Affairs & Nature Conservation.

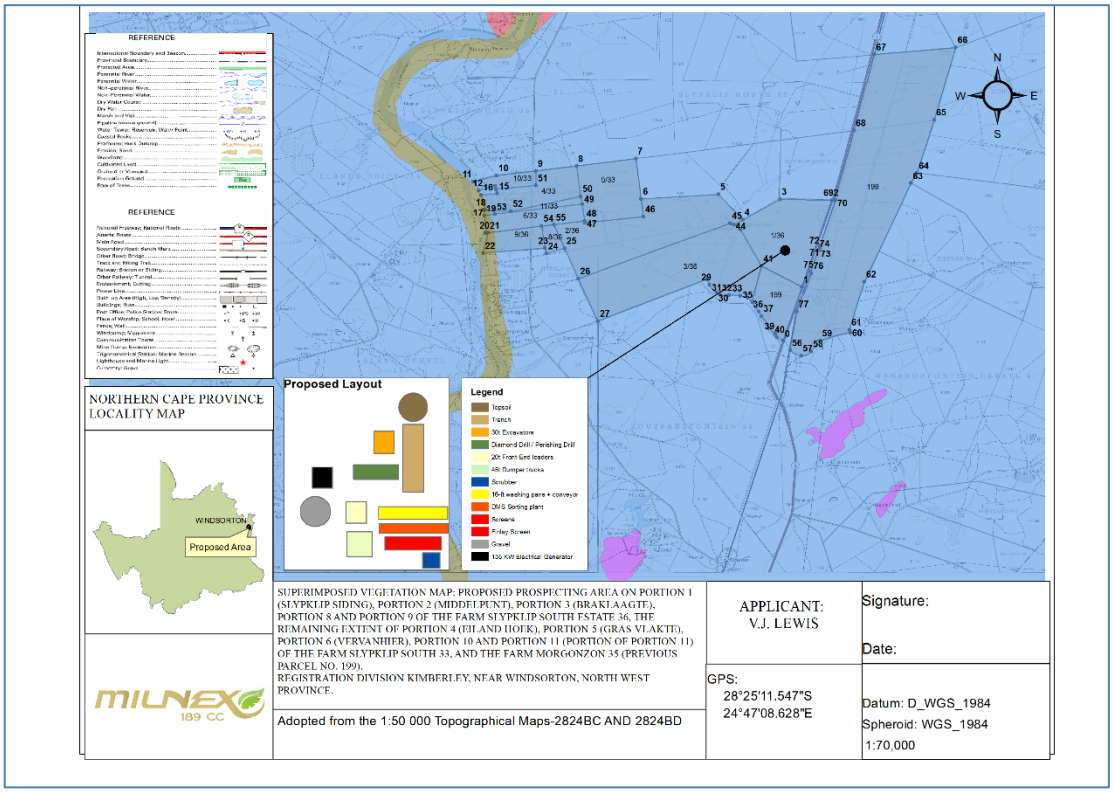


Figure 5: Vegetation Unit Map

According to the data for protected areas, the portion does not fall within a Formally Protected Area, nor Threatened Terrestrial Ecosystems.

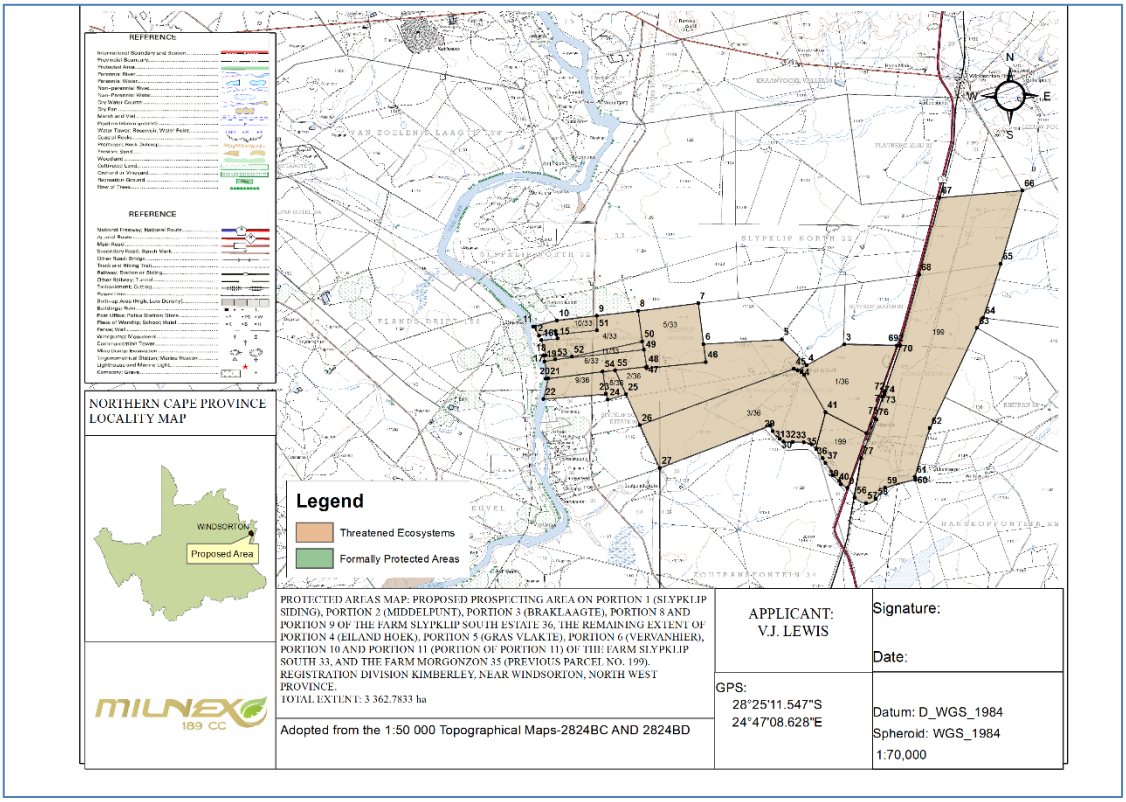


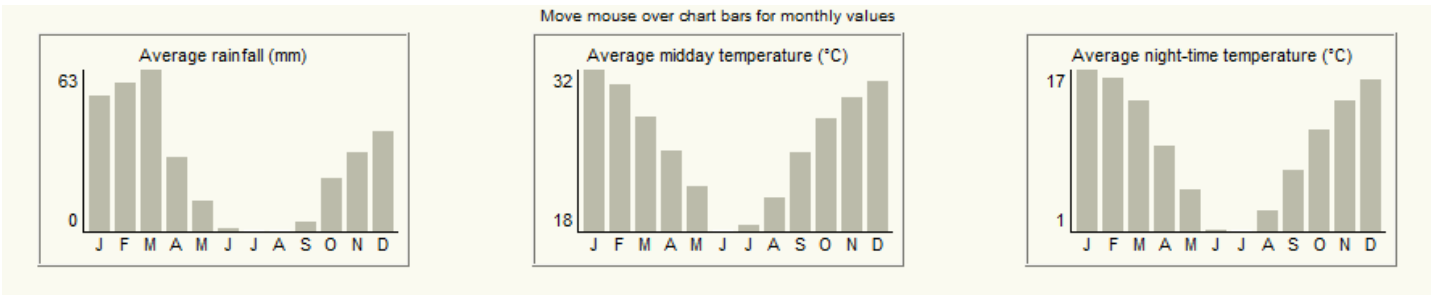
Figure 6: Protected Areas Map

Public meeting attendees mentioned that there are Kori bustard (Gompoue) and Fish eagles. According to the public meeting attendees there are three Camel Thorn trees on the farm Morgenzon 35 and they also mentioned that the area is covered in "Swart Gama bosse" which is good food for the animals (livestock and game). The area is also covered in Sour Karee trees (Suurkaree bome).

Land capability and agricultural potential

- Climate and water availability

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



- Agricultural / land capability

  Land capability is the combination of soil suitability and climate factors. The site and surrounds has a land capability classification, on the 8 category scale, of Class 5 – non-arable:

  - Land in Class V has little or no erosion hazard but have other limitations impractical to remove that limit its use largely to pasture, range, woodland or wildlife food and cover. These limitations restrict the kind of plants that can be grown and prevent normal tillage of cultivated crops. Pastures can be improved and benefits from proper management can be expected.
  - It is nearly level. Some occurrences are wet or frequently flooded. Other are stony, have climatic limitations, or have some combination of these limitations.
  - Examples of Class V are:
    - Bottomlands subject to frequent flooding that prevents the normal production of cultivated crops.
    - Nearly level land with a growing season that prevents the normal production of cultivated crops.
    - Level or nearly level stony or rocky land.
    - Ponded areas where drainage for cultivated crops is not feasible but which are suitable for grasses or trees.

(refer to Land capability map on **figure 7** and attached as **Appendix 5).**

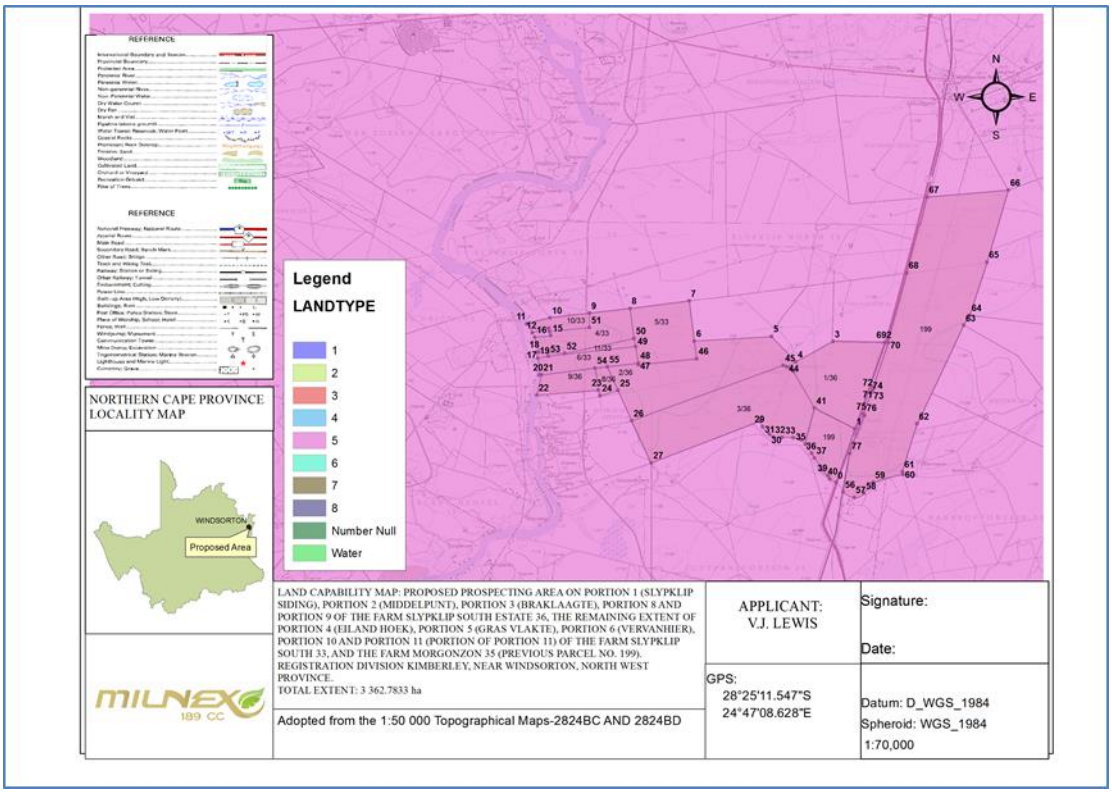


Figure 7: Land capability Map

Critical Biodiversity Area

According to B-GIS "Critical biodiversity areas (CBAs) are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services", therefore the

purpose of CBA's is simply to indicate spatially the location of critical or important areas for biodiversity in the landscape.

Critical Biodiversity Area (CBA)
An area required to meet biodiversity targets for ecosystem types, species or ecological processes. In most cases CBAs are currently in good ecological condition and should remain in good ecological condition. Loss or degradation of CBAs should be avoided.

Ecological Support Area (ESA)
An area that plays an important role in supporting the ecological functioning of a protected area or Critical Biodiversity Area, or in delivering ecosystem services. In most cases ESAs are currently in at least fair ecological condition, and should remain in at least fair ecological condition.

According to the figure 8, the Namakwa District is the only district municipalities which have CBA maps in the Northern Cape. Thus there is no CBD for ZF Mgcawu District District Municipality within whose jurisdiction the proposed mining right application falls.

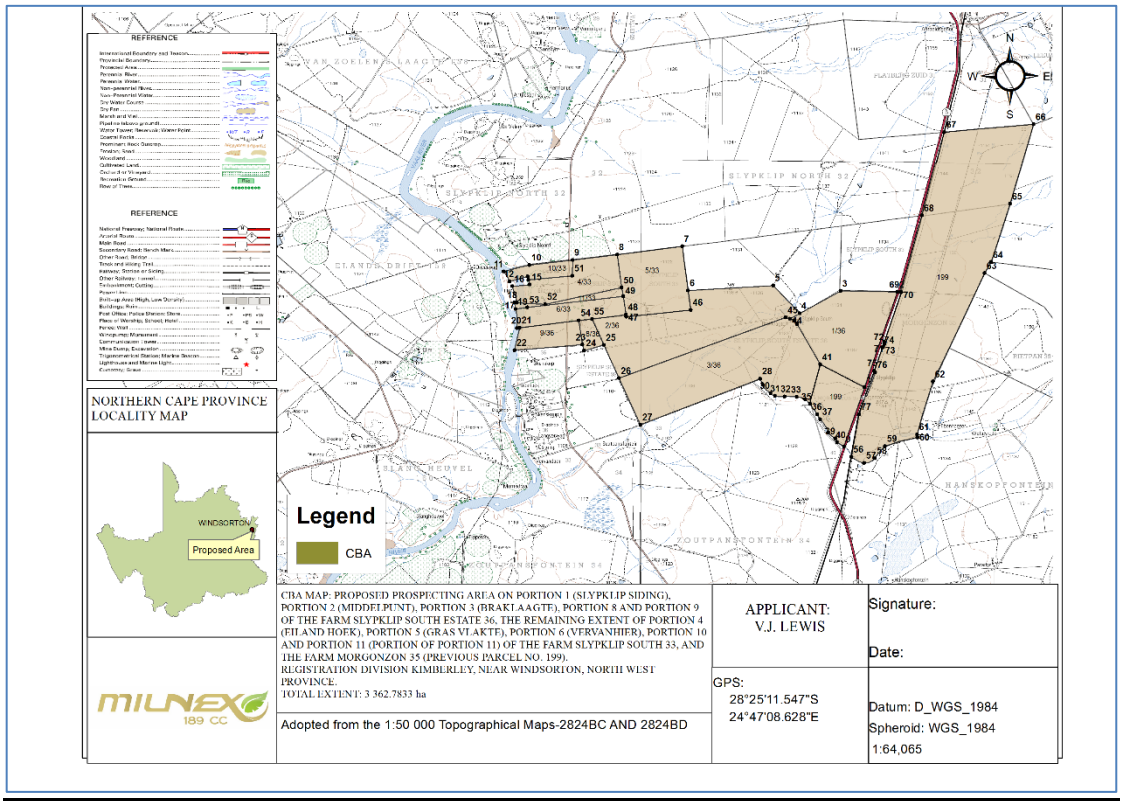


Figure 8: Critical Biodiversity Area Map

Sensitive area for Mine
The proposed portion does not fall under any biodiversity priority areas sensitive to the impacts of mining.

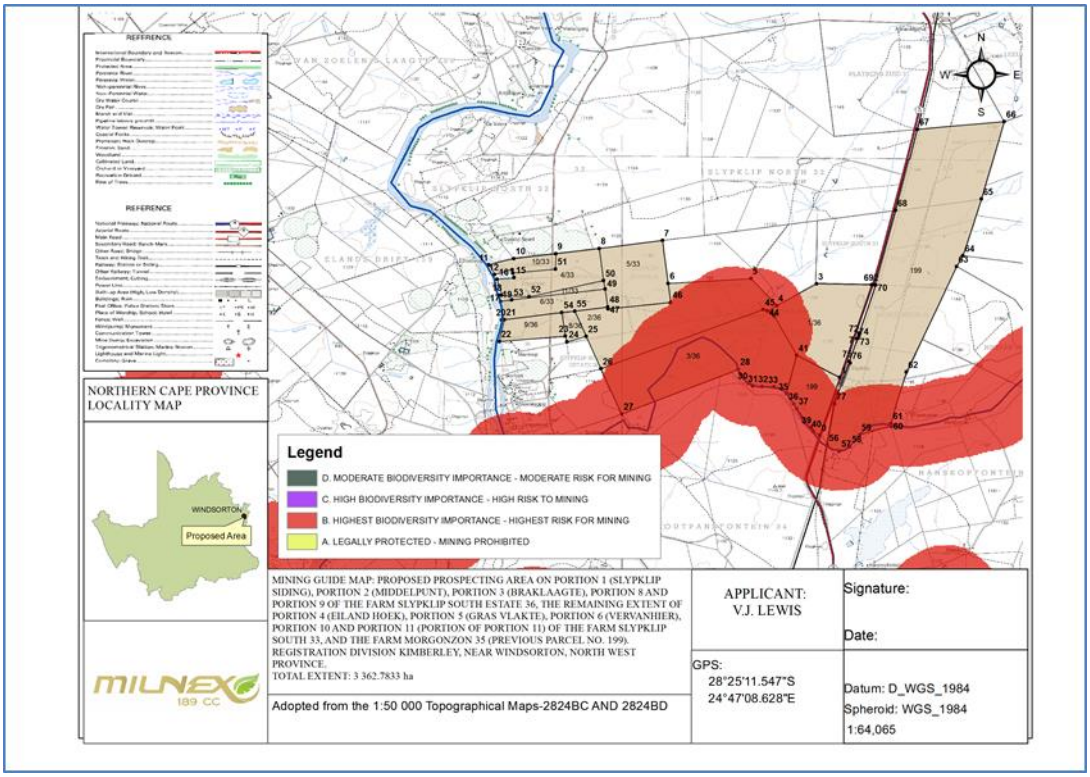


Figure 9: Sensitive area for mine

According to SANBI the proposed area consists of a Highest biodiversity importance area (B) – Leeu River.

The Highest biodiversity importance area (B) are defined as follow (SANBI, 2012):

- 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

Wetland Areas

Map below depicts all wetland areas on the proposed area. The proposed area consists of depressions and the wetland vegetation type falls within the Eastern Kalahari Bushveld Group 3 and Group4.

According to the 2013 SANBI Biodiversity Series 22, a depression is a wetland or aquatic ecosystem with closed (or near-closed) elevation contours, which increases in depth from the perimeter to a central area of greatest depth and within which water typically accumulates. Although they may at times have a river flowing into or out of them, depressions are especially characterised by their closed (or at least near-closed) contour shape, which makes them relatively easy to identify on topographic maps.

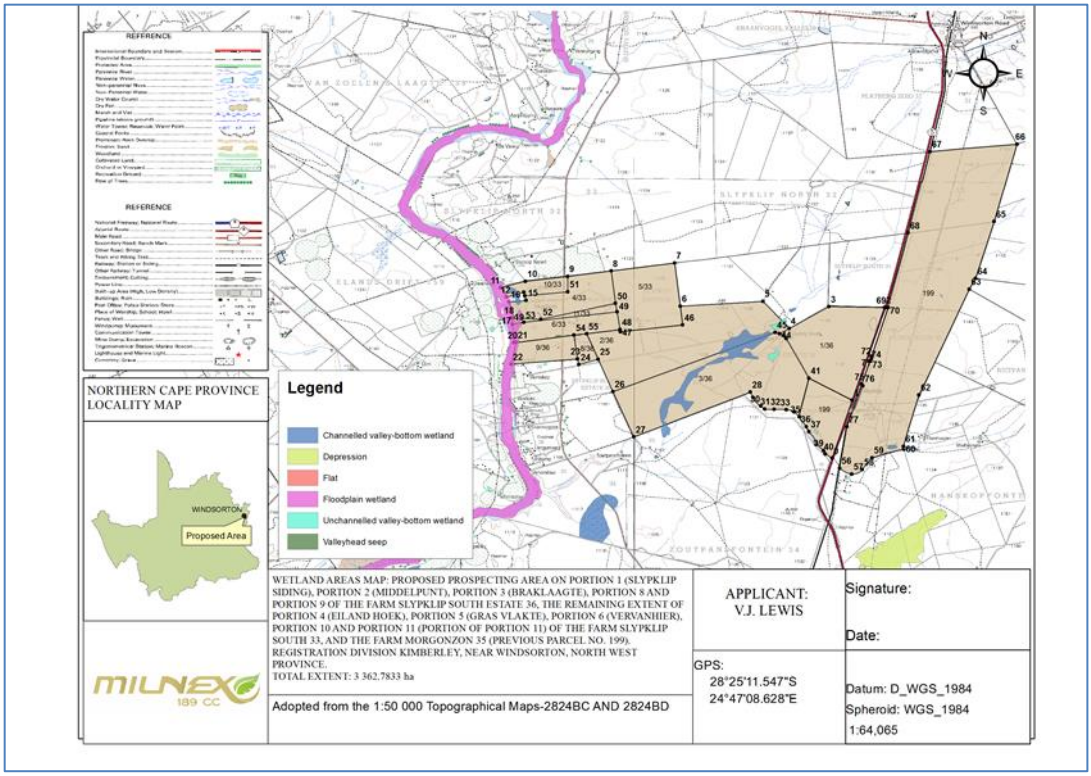


Figure 10: Wetland types present on site

River Ecosystem Status

The status of the river in question is largely natural in this area. The figure below depicts the river ecosystem status

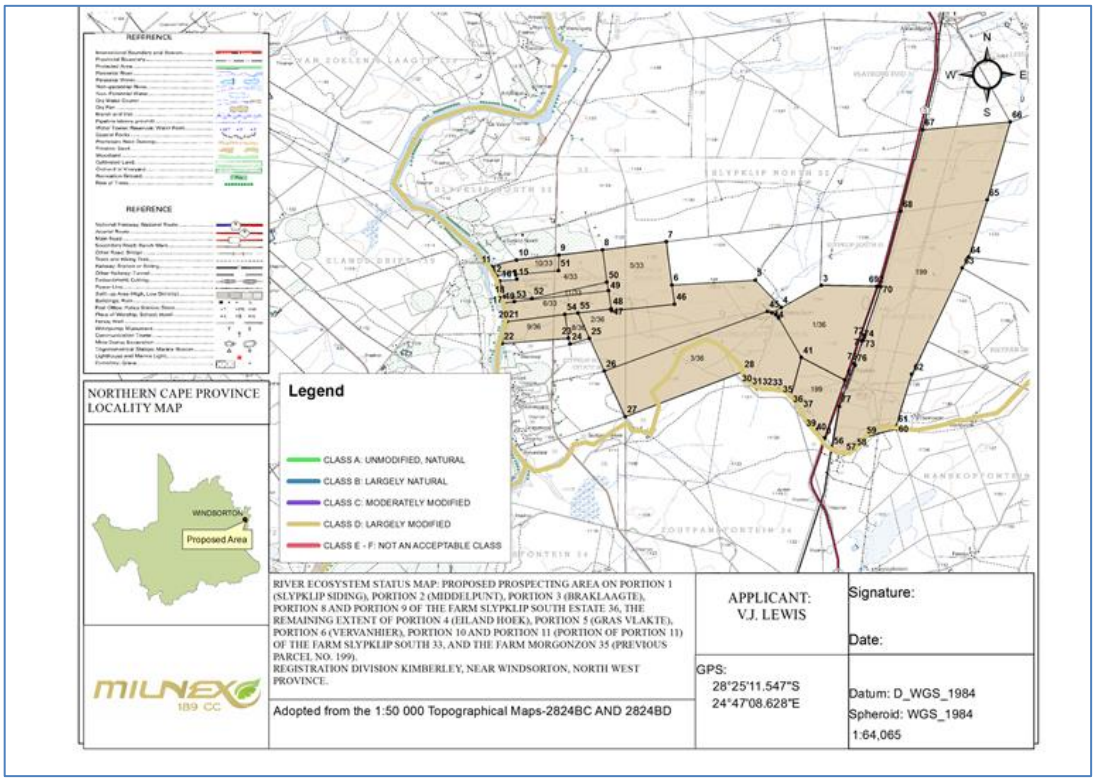


Figure 9: River Ecosystem Status

Description of the socio-economic environment

- Socio-economic conditions

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

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

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

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

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

- Cultural and heritage aspects

Special attention will given to the identification of possible cultural or heritage resources on site. According to the public meeting attendees bushman drawings, graves and excavated areas are found on site, but these graves and drawings will be fenced of and no prospecting activities will

take place close to them. However 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 will be contacted immediately and work must stop.

(b) Description of the current land uses.

The site survey revealed that land uses on and in the immediate vicinity of the proposed development are essentially comprised of crop cultivation, natural, degraded, waterbodies and mines.
The proposed area consists of graves, excavated areas, dams, non-perennial rivers and streams like the Leeu River contributing to the Vaal River, and farm infrastructure. Infrastructure includes central pivot irrigation systems, fences, water troughs, houses, pipes, powerlines (Eskom), roads, etc. The proposed area is also adjacent to the Slypklip train station and Vaal River.

Below is the land cover of the farm

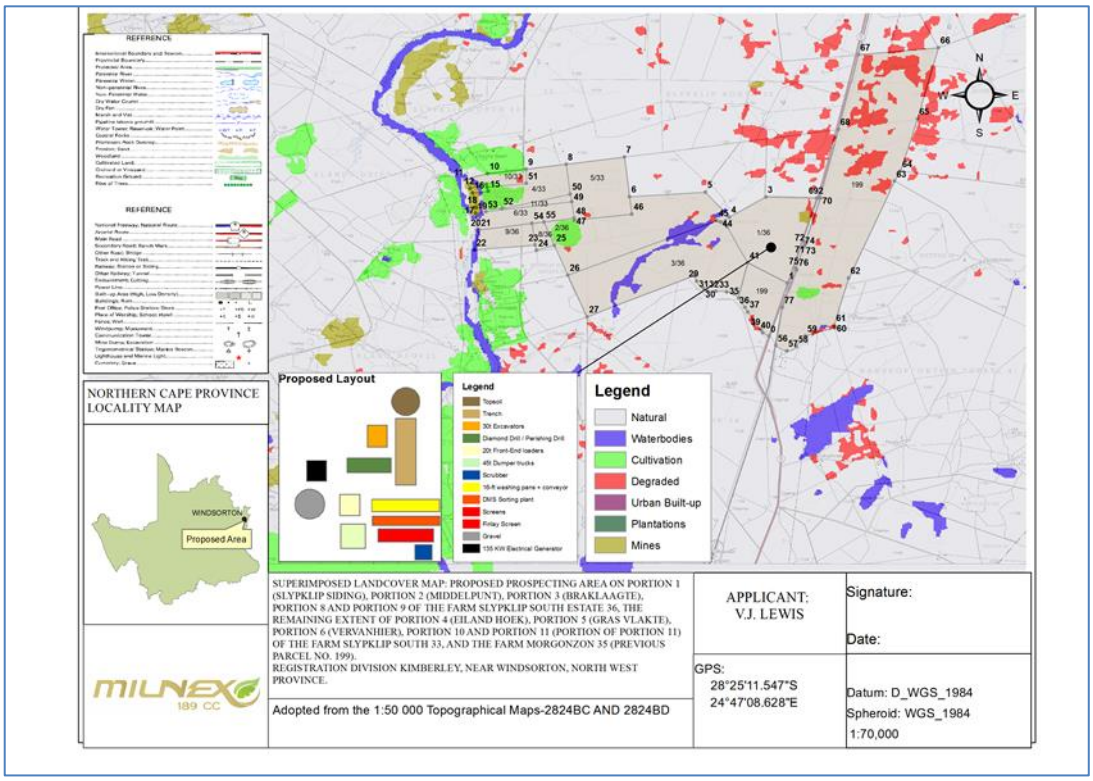


Figure 10: Land cover

The alternative land uses on the proposed property will still take place simultaneously with the prospecting activity, however this depends on the location of the activity.

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

The proposed area consists of graves, excavated areas, dams, non-perennial rivers and streams like the Leeu River contributing to the Vaal River, and farm infrastructure. Infrastructure includes central pivot irrigation systems, fences, water troughs, houses, pipes, powerlines (Eskom), roads, etc. The proposed area is also adjacent to the Slypklip train station and Vaal River.where applicable a Water Use License Application will be launched for conducting prospecting operations.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

A Locality map is attached in **Appendix 3**.

v) Impacts identified

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability and duration of the impacts

- Impacts during construction phase:
  - Impacts on the fauna and flora
  - Impacts on the soil
  - Impacts associated with the geology of the site
  - Impacts on existing services infrastructure
  - Impacts on surface water (wetlands/pans)
  - Temporary employment and other economic benefits
  - Impacts on heritage resources
- Impacts during the operational phase:
  - Impacts on the soil
  - Impacts associated with the geology of the site
  - Impacts on surface water (wetlands/pans)
  - Increase in employment and other economic benefits
  - Visual impacts
  - Generation of income to the Local Community
  - Pressure on existing services infrastructure and water sources.
- Impacts during the decommissioning / mine closure phase:
  - Loss of permanent employment & the creation of temporary employment

vi) Methodology used in determining the significance of environmental impacts

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

Scoping methodology

The contents and methodology of the scoping report aims to provide, as far as possible, a user-friendly analysis of information to allow for easy interpretation.

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

Checklist analysis

The independent consultant a site visit. 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 earmarked for the development?				
I. A river, stream, dam or wetland		✕		The proposed area consists of dams, non-perennial rivers and streams like the Leeu River contributing to the Vaal River. The proposed area is also adjacent to the Slypklip train station and Vaal River.
II. A conservation or open space area		✕		None.
III. An area that is of cultural importance			✕	According to the public meeting attendees bushman drawing and graves are found on site, but these graves will be fenced of and no prospecting activities will take place close to them. If other objects should be found while prospecting, the prospecting activities will stop immediately and a specialist will be appointed to conduct further studies.
IV. Site of geological significance		✕		None.
V. Areas of outstanding natural beauty		✕		None.
VI. Highly productive agricultural land	✕			None
VII. Floodplain	✕			Flood plain may result from the Vaal River and Leeu River. Flat wetland was identified on the proposed area.
VIII. Indigenous forest		✕		None.
IX. Grass land		✕		None.
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		✕		The noise impact is unlikely to be significant.
IV. Construction of an access road		✕		None. Access will be obtained from gravel road off an N12 and R374.
V. Risk to human or valuable ecosystems due to explosion/fire/ discharge of waste into water or air.		✕		None.
VI. Accumulation of large workforce (>50 manual workers) into the site.		✕		Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
VII. Utilisation of significant volumes of local raw materials such as water, wood etc.	✕			16 Ft washing pans which utilise approximately 17 000 L per hour each from which 30% is re-used.
VIII. Job creation	✕			Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
IX. Traffic generation		✕		None.
X. Soil erosion		✕		Only areas earmarked for prospecting will be cleared. The prospecting will be phased and the topsoil stockpiled separately. Concurrent rehabilitation will take place. The soil also has a low erosion potential.
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	✕			Yes, Vaal River and Leeu River
II. A conservation or open space area		✕		None.
III. An area that is of cultural importance			✕	
IV. A site of geological significance		✕		None.
V. An area of outstanding natural beauty		✕		None.
VI. Highly productive agricultural land	✕			None.
VII. A tourist resort		✕		None.
VIII. A formal or informal settlement		✕		None.

5.1 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, and the significance and magnitude of the potential impacts. The matrix also highlights areas of particular concern for more in depth assessment during the EIA process. 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.

Matrix Analysis

LISTED ACTIVITY (The Stressor)	ASPECTS OF THE DEVELOPMENT /ACTIVITY	POTENTIAL IMPACTS			SIGNIFICANCE AND MAGNITUDE OF POTENTIAL IMPACTS			MITIGATION OF POTENTIAL IMPACTS	SPECIALIST STUDIES / INFORMATION
			Receptors	Impact description	Minor	Major	Duration	Possible Mitigation	
CONSTRUCTION PHASE									
Listing Notice GNR 984, Activity 15:"The clearance of an area of 20 hectares or more, of indigenous vegetation."	Site clearing and preparation Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Loss or fragmentation of indigenous natural vegetation. • Loss of sensitive species. • Loss or fragmentation of habitats.		-	L	Yes	-
			Air	• Air pollution due to the increase of traffic of construction vehicles.			S	Yes	-
			Soil	• Soil degradation, including erosion. • Loss of topsoil. • Disturbance of soils and existing land use (soil compaction).		-	S	Yes	-
			Geology	• It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.		-	S	Yes	-
			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	-
		SOCIAL/ECONOMIC ENVIRONMENT	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	-
			Traffic volumes	• Increase in construction vehicles.			S	Yes	-
			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 and people working on the site.	-		S	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the proposed activities will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• 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 984, Activity 15:"The clearance of an area of 20 hectares or more, 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 vegetation located on the site.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Loss or fragmentation of indigenous natural vegetation. • Loss of sensitive species. • Loss or fragmentation of habitats.		-	L	Yes	-
			Air quality	• Air pollution due to the increase of traffic.			S	Yes	-
			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).			S	Yes	-
			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	-
			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	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Job creation. • Skills development.		+	S	N/A	-
			Visual landscape	• Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility due to dust.	-		S	Yes	-
			Traffic volumes	• Increase in construction vehicles.	-		S	Yes	-

			Health & Safety	• Air/dust pollution. • Road safety.		-	S	Yes	-
			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 proposed activity 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.	N/A	N/A	N/A	N/A	-
OPERATIONAL PHASE									
Listing Notice GNR 984, Activity 19: "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resource4s Development Act (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, 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)"	The key components of the proposed project are described below: • Supporting Infrastructure - A control facility with basic services such as water and electricity will be constructed on the site and will have an approximate footprint 50m² or less. Other supporting infrastructure includes a site office and workshop area. • Roads – Access will be obtained from gravel road off an N12 and R374. All site roads will require a width of approximately 10m. • Fencing - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Fragmentation of habitats. • Establishment and spread of declared weeds and alien invader plants (operations).	-		L	Yes	-
			Air quality	• Air pollution due to the mining activity, crusher plant and transport of the gravel to the designated areas.	N/A	N/A	N/A	N/A	-
			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).		-	L	Yes	-
			Geology	• Collapsible soil. • Seepage (shallow water table). • Active soil (high soil heave). • Erodible soil. • The presence of undermined ground. • Instability due to soluble rock. • Steep slopes or areas of unstable natural slopes. • Areas subject to seismic activity. • Areas subject to flooding.		-	S	Yes	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at a licensed landfill site. • Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. • Increased consumption of water. Approximately 17 000 L per hour		-	L	Yes	-
			Ground water	• Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.	-		L	Yes	-
			Surface water	• Increase in storm water runoff. The development will potentially result in an increase in storm water run-off that needs to be managed to prevent soil erosion. • Destruction of watercourses (pans/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.					
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Job creation. Security guards will be required for 24 hours every day of the week and general laborers will also be required for the cleaning of the panels. • Skills development.		+	L	Yes	-
			Visual landscape	• Change in land-use/sense of place. The site is characterized by open veldt with a rural agricultural sense of place. The use of the area for the prospecting activity will result in the area not being used for livestock grazing anymore until rehabilitated.		-	L	Yes	-
			Traffic volumes	• Increase in vehicles collecting gravel for distribution.	-		S	Yes	-
			Health & Safety	• Air/dust pollution. • Road safety.	N/A	N/A	N/A	N/A	-
			Noise levels	• The proposed development will result in noise pollution during the operational phase.	-	-	S	Yes	-
			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	-
			Heritage resources	• It is not foreseen that the proposed activity will impact on heritage resources or vice versa.	N/A	N/A	N/A	N/A	-
DECOMMISSIONING PHASE									
-	Mine closure During the mine closure the Mine and its associated infrastructure will be dismantled. Rehabilitation of biophysical environment The biophysical environment will be rehabilitated.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Re-vegetation of exposed soil surfaces to ensure no erosion in these areas.	+		L	Yes	-
			Air quality	• Air pollution due to the increase of traffic of construction vehicles.	-		S	Yes	-
			Soil	• Backfilling of all voids • Placing of topsoil on backfill	+		L	Yes	-
			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	-
			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	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Loss of employment.		-	L	Yes	-
			Visual landscape	• Potential visual impact on visual receptors in close proximity to proposed facility.	-		S	Yes	-
			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.	-			Yes	-
			Noise levels	• The generation of noise as a result of construction vehicles, the use of machinery and people working on the site.	-		S	Yes	-
			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	-
			Heritage resources	• It is not foreseen that the decommissioning phase will impact on any heritage resources.	N/A	N/A	N/A	N/A	-

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

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.
- 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 cattle 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.

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).

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

ix) The outcome of the site selection Matrix. Final Site Layout Plan

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)

Refer to the proposed site layout map below and attached as **Appendix 5**.

x) Motivation where no alternative sites were considered.

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, the possibility to encounter further Diamond Reserves on farm Slypklip South Estate 36, Slypklip South 33 and Morgenzon 35 were identified.

Furthermore, no other properties have been secured by the applicant, Vincent John Lewis.

xi) Statement motivating the preferred site.

(Provide a statement motivation the final site layout that is proposed)

The site is preferred due to its possibility of having diamond reserves, the property is also only suitable for low potential grazing land due to the climate conditions

No other properties have been secured by the applicant.

(i) Plan of study for the Environmental Impact Assessment process

i. Description of alternatives to be considered including the option of not going ahead with the activity.

The option of not approving the activities will result in a significat loss of valuable information regarding the mineral status (in terms of diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

ii. Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, Loading, hauling and transport, and mining activities such as Excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.).

Table: Aspects to be assessed

Aspects / potential impacts	Description of the aspect	Specialist studies / technical information
Biophysical Environment		
Impacts on the fauna and flora	Refer to Matrix table	EAP assessment (using desktop studies, GIS, site visits and the book written by Mucina and Rutherford(The Vegetation of South Africa, Lesotho and Swaziland)
Impacts on the air quality	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on the soil	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts associated with the geology of the site	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on existing services infrastructure	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on ground and surface water	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Socio / Economic Environment		

Impacts on local employment rate	Refer to Matrix table	EAP assessment (using desktop studies, IDP's and SDF's)
Impacts on visual landscape	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on traffic volumes	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on health & safety	Refer to Matrix table	EAP assessment (desktop studies, site visits)

iii. Description of aspects to be assessed by specialists

No need for specialist studies are foreseen at this stage.

iv. Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The environmental assessment aims to identify the various possible environmental impacts that could results from the proposed activity. 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.

v. The proposed method of assessing duration significance

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 project phases:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact should be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance should also be included. The rating system is applied to the potential impacts on the receiving environment and

includes an objective evaluation of the mitigation of the impact. In assessing the significance of each impact the following criteria is used:

Table: The rating system

NATURE		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be experienced.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact.		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
DURATION		
This describes the duration of the impacts. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase (0 – 1 years), or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).

2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered indefinite.
INTENSITY/ MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/ component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
REVERSIBILITY		
This describes the degree to which an impact can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.

3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts. A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The calculation of the significance of an impact uses the following formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity. The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact significance rating	Description
6 to 28	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive low impact	The anticipated impact will have minor positive effects.

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

vi. The stages at which the competent authority will be consulted

Consultation with the competent and commenting authorities will continue throughout the duration of impact assessment phase. The authorities will also comment on whether they deem it necessary to conduct any specialist studies. On-going consultation will include:

- Submission of the Scoping following a 30 day public review period (and consideration of comments received).
- Submission of the EIR following a 30 day public review period (and consideration of comments received).
- Arrangements will be made to discuss the report with the Environmental Officer responsible for the project during the review period.
- An opportunity to visit and inspect the site.

vii. Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

1. Steps to be taken to notify interested and affected parties.

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h) (ii) herein).

All registered I&APs and relevant State Departments will be given the opportunity to review the Scoping, EIR and EMP in accordance with Regulation R982. A minimum of 30 days commenting period will be allowed and all stakeholders and I&APs will be given an opportunity to forward their written comments within that period. All issues identified during this public review period will be documented and compiled into a Comments and Response Report to be included as part of the Final EIR to be submitted to the Northern Cape Department of Mineral Resources.

2. Details of the engagement process to be followed.

(Describe the process to be 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 and records of such consultation will be required in the EIA at a later stage).

The public participation process will be conducted strictly in accordance with Regulations 39-44. The following three categories of variables will take into account when deciding the required level of public participation:

- The scale of anticipated impacts.
- The sensitivity of the affected environment and the degree of controversy of the project.
- The characteristics of the potentially affected parties.

the following public participation mechanisms will be used:

- Newspaper advertisement in local newspaper
- Site notices
- Direct notification of surrounding land owners and occupiers
- Circulation of scoping report
- Circulation of EIR
- Public participation meeting
- Direct notification to all stakeholders of the Environmental Authorisation given

3. Description of the information to be provided to Interested and Affected Parties.

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land).

The letter provided to I&APs comprises of a activity, extent and location description, including a locality map of the proposed activity and a Dropbox link to the full Scoping report and Appendices. It also indicates where a hard copy of the report can be viewed or if the need arises for a copy of the report a request can be sent to the relevant EAP who will forward a CD containing all the relevant information.

viii. Description of the tasks that will be undertaken during the environmental impact assessment process

Tasks to be undertaken

The following sections describe the tasks that will be undertaken as part of the EIA process.

- Project Description

  Further technical and supporting information will be gathered to provide a more detailed project description. This will include a detailed site layout plan that will be compiled once the low – medium areas of sensitivity have been indicated.

- **Location alternatives**

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity.

- **Activity alternatives**

The Scoping process also needs to consider if the development of an alluvial diamond and diamonds general mine would be the most appropriate land use for the particular site.

Mining 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 alluvial diamond and diamonds general.

Agriculture – Due to the site being arable and have high crop production capabilities only certain areas of the proposed portion is preferred.

- **Design and layout alternatives**

Design alternatives were considered throughout the planning and design phase (i.e. where is the diamond bearing gravel located?). In this regard discussions on the design were held between the EAP and the developer. The layout follows the limitations of the site and aspects such as, roads, site offices and workshop area as well as fencing– refer **Appendix 3**.

- **No-go alternative**

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

- **Compilation of Environmental Impact Report**

An EIR will be compiled to meet the content requirements as per Appendix 3 of GNR982 of the EIA Regulations (4 December 2014) and will also include a draft Environmental Management Programme containing the aspects contemplated in Appendix 4 of GNR982.

(ix) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

ACTIVITY whether listed or not listed. **(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.).**	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)**	**MITIGATION TYPE** **(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)** **E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation..**	**POTENTIAL FOR RESIDUAL RISK**
Impacts on the fauna and flora	Surface disturbance	Monitor through rehabilitation	High
Impacts on the air quality	dust	Dust Control	low
Impacts on the soil	Erosion	Storm water control	medium
Impacts associated with the geology of the site	Fly rock	Blasting controls	low
Impacts on ground and surface water	Ground and surface water contamination	Storm water control, avoidance	Medium
Impacts on visual landscape	dust	Dust control measures	low
Impacts on traffic volumes	dust	Dust control measures	low

l) Other Information required by the competent Authority

i) Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-

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

The prospecting will not impact directly on any socio-economic aspects. Indirect socio-economic benefits are expected to be associated with the creation of employment in the Northern Cape Province.

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

According to the public meeting attendees bushman drawings, graves and excavated areas are found on site, but these graves and drawings will be fenced of and no prospecting activities will take place close to them. The prospecting will not impact on any heritage estate referred to in section 3(2) of the National Heritage Resources Act. In terms of the National Heritage Resource Act no 25 of 1999. Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA will be contacted immediately and work will stop.

m) 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 on the farm Slypklip South Estate 36, Slypklip South 33 and Morgenzon 35 Registration Division: Kimberley. Northern Cape Province are preferred due to the sites expected mineral resources. No other properties have been secured by Vincent John Lewis for the purpose of prospecting as an alternative. The specific site has been chosen for its mineral resources thus making an alternative site selection null and void.

j) UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I Danie Labuschagne herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties has been correctly recorded in the report.

Signature of the EAP
DATE: 01-12-2016

k) UNDERTAKING REGARDING LEVEL OF AGREEMENT

I Danie Labuschagne herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP
DATE: 01-12-2016

-END-