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**ENVIRONMENTAL IMPACT ASSESSMENT REPORT &  
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR:**

**THE PROPOSED PROSPECTING RIGHT WITH BULK SAMPLING FOR THE PROSPECTING OF DIAMONDS ALLUVIAL (DA), DIAMONDS GENERAL (D) & DIAMONDS IN KIMBERLITE (DK) INCLUDING ASSOCIATED INFRASTRUCTURE, STRUCTURE AND EARTHWORKS ON THE REMAINING EXTENT, REMAINING EXTENT OF PORTION 1 (FIJNDOORNS), PORTION 9 (PORTION OF PORTION 2) OF THE FARM MARAETCHESFONTEIN 54 AND REMAINING EXTENT OF PORTION 4 OF THE FARM RIETPUT 60, REGISTRATION DIVISION: HO, NORTH WEST PROVINCE.**

<b>NAME OF APPLICANT</b>	<b>JH DELWERY (PTY) LTD</b>
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### **PROJECT INFORMATION**

**Project Name:** Application for an Environmental Authorisation for the proposed Prospecting Right of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite (DK) including associated infrastructure, structure and earthworks on the remaining extent, remaining extent of portion 1 (fijndoorns), portion 9 (portion of portion 2) of the farm Maraetchesfontein 54 and remaining extent of portion 4 of the farm Rietput 60, Registration Division: HO, North West Province

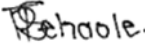
**Report Title:** EIR & EMPr

**Prepared By:** Milnex CC

**Date:** December 2021

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### **QUALITY CONTROL:**

	<b>Report Author:</b>	<b>Report Reviewer:</b>
<b>Name:</b>	Ms. Percy Schaole Reg EAP (EAPASA) Pr. Sci. Nat.	N/A
<b>Signature:</b>		

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### **The DEA screening tool was used in compiling this document**

The Public Participation Process (PPP) must follow Regulation 41 of NEMA EIA Regulations; thus, the process needs to be transparent. However, due to the Protection of Personal Information Act (POPI Act) which commenced on 01 July 2021, Stakeholders, Landowners, surrounding landowners and registered I&AP' addresses, contact details and comments will not be included in any draft report to be circulated. All this information will form part of the final report to be submitted to the Competent Authority only.

Should you be identified as a Stakeholder, Landowner, Surrounding landowner and you do not wish to receive any further communicate from Milnex CC regarding the application in question, you may request in writing that your details be removed from the Milnex CC database for this application.

## 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.

## **ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**

- (1) The environmental impact assessment process must be undertaken in line with the approved plan of study for environmental impact assessment.
- (2) The environmental impacts, mitigation and closure outcomes as well as the residual risks of the proposed activity must be set out in the environmental impact assessment report.

## **OBJECTIVE OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**

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



## SCOPE OF ASSESSMENT AND CONTENT OF ENVIRONMENTAL IMPACT ASSESSMENT REPORTS

### A. CONTACT PERSON AND CORRESPONDENCE ADDRESS

#### a) Details of:

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

NAME OF PRACTITIONER	QUALIFICATIONS	CONTACT DETAILS
Ms. Percy Sehaole Pr. Sci. Nat. Reg. EAP (EAPASA)	Master's Degree in Environmental Science  Master's Degree in Environmental Management (refer to <b>Appendix 1</b> )	Tel No.: (018) 011 1925 Fax No.: (053) 963 2009 e-mail address: <a href="mailto:percy@milnex-sa.co.za">percy@milnex-sa.co.za</a>
Lizanne Esterhuizen	Honours Degree in Environmental Science (refer to <b>Appendix 1</b> )	Tel No.: (018) 011 1925 Fax No.: (053) 963 2009 e-mail address: <a href="mailto:lizanne@milnex-sa.co.za">lizanne@milnex-sa.co.za</a>
Mr. Christiaan Baron	Master's Degree in Environmental Management (M.Sc .Env.Man) (refer to <b>Appendix 1</b> )	Tel No.: (018) 011 1925 Fax No.: (053) 963 2009 e-mail address: <a href="mailto:christiaan@milnex-sa.co.za">christiaan@milnex-sa.co.za</a>

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

Milnex CC was contracted by **JH Delwery (Pty) Ltd** as the independent environmental consultant to undertake the Scoping and EIA process for a Prospecting Right of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite (DK) including associated infrastructure, structure and earthworks on the remaining extent, remaining extent of portion 1 (fijndoorns), portion 9 (portion of portion 2) of the farm Maraetchesfontein 54 and remaining extent of portion 4 of the farm Rietput 60, Registration Division: HO, North West Province. The property is located approximately 12.7km NE of Schweizer-Reneke on the R504 towards Wolmaransstad in the North West Province.

Milnex CC does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Milnex 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 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 CC team has considerable experience in environmental impact assessment and environmental management, especially in the mining industry.

Percy Sehaole, Lizanne Esterhuizen & Christiaan Baron 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

<b>Farm Name:</b>	<ol style="list-style-type: none"> <li>1) Remaining Extent of the farm Maraatchesfontein 54 Extent: 466.1304 hectares</li> <li>2) Remaining Extent of portion 1 (Fijndoorns) of the farm Maraatchesfontein 54 Extent: 429.6490 hectares</li> <li>3) Portion 9 (portion of portion 2) of the farm Maraatchesfontein 54 Extent: 171.3064 hectares</li> <li>4) Remaining Extent of Portion 4 of the farm Rietput 60 Extent: 537.4482 hectares</li> </ol>
<b>Application area (Ha)</b>	1604.534 ha
<b>Magisterial district:</b>	Dr Ruth Segomotsi Mompati District Municipality Mamusa Local Municipality
<b>Registration division:</b>	HO
<b>Distance and direction from nearest town</b>	The property is located approximately 12.7km NE of Schweizer-Reneke on the R504 towards Wolmaransstad in the North West Province
<b>21 digit Surveyor General Code for each farm portion</b>	<ol style="list-style-type: none"> <li>1. T0HO0000000005400000</li> <li>2. T0HO0000000005400000</li> <li>3. T0HO0000000005400009</li> <li>4. T0HO0000000006000000</li> </ol>
<b>Minerals applied for</b>	Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite (DK)

### iii. Farm co-ordinates

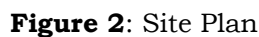
Farms		Longitude	Latitude
1) Remaining Extent of the farm Maraatchesfontein 54	0	25° 25' 3.959" E	27° 7' 23.233" S
	1	25° 25' 39.605" E	27° 7' 18.398" S
2) Remaining Extent of portion 1 (Fijndoorns) of the farm Maraatchesfontein 54	2	25° 26' 2.224" E	27° 7' 37.458" S
	3	25° 25' 50.774" E	27° 7' 55.427" S
3) Portion 9 (portion of portion 2) of the farm Maraatchesfontein 54	4	25° 25' 27.356" E	27° 8' 41.148" S
	5	25° 24' 40.665" E	27° 8' 22.657" S
4) Remaining Extent of Portion 4 of the farm Rietput 60	6	25° 24' 22.116" E	27° 8' 59.040" S
	7	25° 25' 7.540" E	27° 9' 19.082" S
	8	25° 25' 2.764" E	27° 9' 28.210" S
	9	25° 24' 33.436" E	27° 9' 30.131" S
	10	25° 24' 29.598" E	27° 9' 30.236" S

	11	25° 24' 18.527" E	27° 9' 25.308" S
	12	25° 24' 10.612" E	27° 10' 0.096" S
	13	25° 24' 2.284" E	27° 10' 34.472" S
	14	25° 21' 53.603" E	27° 10' 7.169" S
	15	25° 22' 45.020" E	27° 9' 41.892" S
	16	25° 22' 53.048" E	27° 9' 34.563" S
	17	25° 23' 5.746" E	27° 9' 19.784" S
	18	25° 23' 2.457" E	27° 9' 19.520" S
	19	25° 23' 8.125" E	27° 9' 7.030" S
	20	25° 22' 13.796" E	27° 8' 41.408" S
	21	25° 22' 4.709" E	27° 8' 37.122" S
	22	25° 22' 8.603" E	27° 8' 34.007" S
	23	25° 22' 12.298" E	27° 8' 31.084" S
	24	25° 22' 15.056" E	27° 8' 27.482" S
	25	25° 22' 17.425" E	27° 8' 23.428" S
	26	25° 22' 20.344" E	27° 8' 20.650" S
	27	25° 22' 22.759" E	27° 8' 16.555" S
	28	25° 22' 25.928" E	27° 8' 13.241" S
	29	25° 22' 27.749" E	27° 8' 8.941" S
	30	25° 22' 30.802" E	27° 8' 4.825" S
	31	25° 22' 33.721" E	27° 8' 2.375" S
	32	25° 22' 37.919" E	27° 8' 0.109" S
	33	25° 22' 42.346" E	27° 7' 58.480" S
	34	25° 22' 46.294" E	27° 7' 57.469" S
	35	25° 22' 48.480" E	27° 7' 53.498" S
	36	25° 23' 26.421" E	27° 8' 24.397" S
	37	25° 24' 30.236" E	27° 8' 11.788" S
	38	25° 25' 0.133" E	27° 8' 5.503" S

### C. LOCALITY MAP

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

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



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

### i) LISTED AND SPECIFIED ACTIVITIES

<p><b>Description of the overall activity.</b> (Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)</p>	<ol style="list-style-type: none"> <li>1) <b>Listing notice 1 GNR327: Activity 9:</b> <i>“The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water— (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more;”</i></li> <li>2) <b>Listing notice 1 GNR 327: Activity 10:</b> <i>“The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more;”</i></li> <li>3) <b>Listing Notice 1: GNR 327, Activity 19:</b> <i>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from:</i> (i) a watercourse;</li> <li>4) <b>Listing Notice 1, GNR 327, Activity 20:</b> <i>“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— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] (b) the primary processing of a petroleum resource including winning, extraction, classifying, concentrating or water removal; –</i></li> <li>5) <b>Listing Notice 1, GNR 327, Activity 27:</b> <i>“The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation”</i></li> <li>6) <b>Listing Notice 2, GNR 325, Activity 19:</b> <i>“The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource or (b) [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 primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;</i></li> <li>7) <b>Listing Notice 3: GNR 324, Activity 12:</b> <i>The clearance of an area of 300 square metres or more of indigenous vegetation (h): North West; (iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority; (vi) Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.</i></li> <li>8) <b>NEM:WA 59 of 2008: Residue stockpiles or residue deposits, Category A: (15)</b> <i>The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a prospecting right or mining permit, in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).</i></li> </ol>
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	Prospecting right with bulk samples for the prospecting of <b>Diamonds Alluvial (DA), Diamonds General (D) &amp; Diamonds in Kimberlite (DK)</b> including associated infrastructure, structure and earthworks.
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<b>NAME OF ACTIVITY</b>  <b>(E.g. For prospecting</b> - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route <b>etc...etc...etc</b> <b>E.g. for mining</b> ,- 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.)	<b>Aerial extent of the Activity</b> <b>Ha or m²</b>	<b>LISTED ACTIVITY</b>  (Mark with an <b>X</b> where applicable or affected).	<b>APPLICABLE LISTING NOTICE</b>  <b>(GNR 324, GNR 325 or GNR 326)</b>	<b>WASTE MANAGEMENT AUTHORISATION</b>  (Indicate whether an authorisation is required in terms of the Waste Management Act) <b>(Mark with an X)</b>
<b>Bulk transportation of water or storm water:</b> <b><u>BULK SAMPLING:</u></b> 1604.534 Ha – 100 pits (3m x 2m x 3m) & 30 trenches (40m x 30m x 3m)  <b>Listing notice 1, GNR327: Activity 9:</b> <i>The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water— (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more;</i>		X	Listing notice 1 GNR327: Activity 9	-
<b>Bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes:</b> <b><u>BULK SAMPLING:</u></b> 1604.534 Ha – 100 pits (3m x 2m x 3m) & 30 trenches (40m x 30m x 3m)  <b>Listing notice 1, GNR 327: Activity 10:</b> <i>The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more;</i>		X	Listing notice 1 GNR 327: Activity 10	-
<b>Prospecting Right:</b> <b><u>BULK SAMPLING:</u></b> 1604.534 Ha – 100 pits (3m x 2m x 3m) & 30 trenches (40m x 30m x 3m)  <b>Listing Notice 1, GNR 327, Activity 19:</b> <i>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal</i>	Random indigenous vegetation clearance of over a 1604.534 hectares area.  Concurrent backfilling will take	X	Listing Notice 1: GNR 327, Activity 19	-

or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from: (i) a watercourse;	place in order to rehabilitate.			
<b>Prospecting Right:</b> <b>BULK SAMPLING:</b> 1604.534 Ha – 100 pits (3m x 2m x 3m) & 30 trenches (40m x 30m x 3m)  <b>2 x 16 feet washing pan</b> with 144 000 tons to be washed, conveyors, screens, etc <b>b</b> <b>Listing Notice 1, GNR 327, Activity 20:</b> “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— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] (b) the primary processing of a petroleum resource including winning, extraction, classifying, concentrating or water removal	Random indigenous vegetation clearance of over a 1604.534 hectares area.  Concurrent backfilling will take place in order to rehabilitate.	X	Listing Notice 1, GNR 327, Activity 20:	-
<b>Clearance of indigenous vegetation:</b> <b>BULK SAMPLING:</b> 1604.534 Ha – 100 pits (3m x 2m x 3m) & 30 trenches (40m x 30m x 3m)  <b>Listing Notice 1, GNR 327, Activity 27:</b> “The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation”	Random indigenous vegetation clearance of over a 1604.534 hectares area.  Concurrent backfilling will take place in order to rehabilitate.	X	Listing Notice 1, GNR 327, Activity 27	-



<p><b>Prospecting:</b> <b>BULK SAMPLING:</b> 1604.534 Ha – 100 pits (3m x 2m x 3m) &amp; 30 trenches (40m x 30m x 3m)</p> <p><b>Listing Notice 2, GNR 325, Activity 19:</b> <i>“The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—</i> <i>(a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource [,]; or</i> <i>(b) [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 primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing</i></p>	<p>Random indigenous vegetation clearance of over a 1604.534 hectares area.</p> <p>Concurrent backfilling will take place in order to rehabilitate.</p>	<p>X</p>	<p>Listing Notice 2, GNR 325, Activity 19:</p>	<p>-</p>
<p><b>Clearance of indigenous vegetation:</b> <b>BULK SAMPLING:</b> 1604.534 Ha – 100 pits (3m x 2m x 3m) &amp; 30 trenches (40m x 30m x 3m)</p> <p><b>Listing Notice 3: GNR 324, Activity 12:</b> <i>The clearance of an area of 300 square metres or more of indigenous vegetation (h): North West; (iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority; (vi) Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.</i></p>	<p>Random indigenous vegetation clearance of over a 1604.534 hectares area.</p> <p>Concurrent backfilling will take place in order to rehabilitate.</p>		<p>Listing Notice 3: GNR 324, Activity 12:</p>	
<p><b>NEM:WA 59 of 2008: Residue stockpiles or residue deposits, Category A: (15):</b> <i>The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a prospecting right or mining permit, in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).</i></p>		<p>X</p>	<p>NEM:WA 59 of 2008 Category A: (15)</p>	<p><b>X</b></p>

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

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

**JH Delwery (Pty) Ltd** has embarked on a process for applying for a Prospecting Right of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite (DK) including associated infrastructure, structure and earthworks on the remaining extent, remaining extent of portion 1 (fijndoorns), portion 9 (portion of portion 2) of the farm Maraatchesfontein 54 and remaining extent of portion 4 of the farm Rietput 60, Registration Division: HO, North West Province. These farms are preferred due to the sites expected mineral resources. **JH Delwery (Pty) Ltd** requires a prospecting right in terms of NEMA and the Mineral and Petroleum Resources Development Act to mine diamonds alluvial within the Mamusa Local Municipality North West Province (refer to a locality map attached in **Appendix 3**).

## **A DESCRIPTION OF HOW THE MINERAL RESOURCE AND MINERAL DISTRIBUTION OF THE PROSPECTING AREA WILL BE DETERMINED**

### **Phase 1: Pitting**

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

To dig the pits, the applicant shall make use of the systems of F.J. G Putter, the appointed project geologist. The applicant shall at the end of the pitting process have locked the pits with the following information:

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

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

- **(100 pits / 15 months) x 12 months = 80 pits dug per year**
- **Total area to be disturbed per year = 80 pits x (3 m x 2 m) / 10 000 = 0.288 Ha disturbed per year**
- **Total area disturbed for 15 months = 100 pits x (3 m x 2 m) / 10 000 = 6 Ha disturbed for 15 months**

### **Trenches**

The plant/ bulk sampling technique will be that of a typical South African alluvial diamond mining operation. The method is a strip mining process with oversize material and tailings recovered from the plant will be used as backfill material prior to final rehabilitation. Gravels are excavated, loaded and transported to the treatment facility using dump trucks.

The applicant shall immediately after the pitting exercise commence with bulk sampling activities. Given the extent of the area and the grades expected to be very low, the applicant shall have to process bulk samples of approximately 1 18 800 tons.

Before excavation commences vegetation will be cleared from the proposed bulk sampling block. These will be done as per environmental regulations. Top soil will then be removed and stored separately for later used for rehabilitation. The bulk samples will be made in the form of box cuts whereby the dimensions of these individual box cuts on average are to be **40 m long x 30 m wide x 3 m deep**.

Gravel will be removed by excavators and will be loaded directly into dump trucks. Ore will be hauled to the screening plant. The material will be screened where after the screened material will be moved to the processing plant where the gravel will be processed. Concentrate will be moved to the sorting plant where the concentrate will be sorted. It is estimated that the bulk sampling will take approximately **15 months consisting of about 30 trenches** to be excavated.

The screened gravel will be concentrated to eliminate oversize and undersize clasts as well as material which are too light or too heavy to contain diamonds. This will be followed by a physical separation of diamonds. Screening plants to be employed shall either be static or vibrating single or double deck systems to remove oversize and undersize material to allow a sized material stream to be fed to the processing and the concentration plant.

- **(30 trenches / 15 months) x 12 months = 24 trenches dug per year**
- **Total area to be disturbed per year = 24 trenches x (40 m x 30 m) / 10 000 = 2.88 Ha disturbed per year**
- **Total area to be disturbed for 15 months = 30 trenches x (40 m x 30 m) / 10 000 = 3.6 Ha disturbed per year**

#### **Rehabilitation:**

Since **100 pits & 30 Trenches** are anticipated to be made over the period of 30 Months, concurrent rehabilitation needs to take place. It should be noted that **6.48ha** would be disturbed at any given time.

#### **Phase 3: Consolidation and interpretation of results data**

The prospecting activities will be conducted to determine an inferred diamond resource and an indicated diamond resource. An inferred diamond resource has a lower level of confidence than that applying to an indicated diamond resource. The inferred resource indication shall be where the geological and or grade continuity could not be confidently interpreted. It cannot be assumed that an inferred resource will necessarily be upgraded to an indicated resource. Such a resource is normally also not sufficient to enable an evaluation of economic viability.

To obtain an indicated resource the confidence level of information obtained from the prospecting will have to be sufficient for the information to be applied to mine design, mine planning to enable an evaluation of economic viability.

The project geologist, Pierre de Jager, shall monitor the program and consolidate and process the data and amend the program depending on the results received after each phase of prospecting. The DMR shall be updated of any amendments made. This shall be a continuous process throughout the prospecting work program.

Each physical phase of prospecting shall be followed by desktop studies involving interpretation and modeling of all data gathered. These studies will determine the manner in which the work programme is to be proceeded with in terms of the activity, quantity, resources, expenditure and duration.

A GIS data base will be constructed capturing all the exploration data. All data shall be consolidated and processed to determine the diamond bearing resource on the property and it will be done within the period of 6 months.

#### **Water uses:**



Water uses under section 21 a-k of the NWA may be triggered, thus a Water Use Licence Application (WULA) will needed in cases there will be encroachment. When needed WULA will be lodged with the department of Water & Sanitation (DWS).

**Table 1:** Water Use Pan Size specifications for Alluvial Diamond Mining (DWS NC & FS, 2001).

Pan size	Water/hour (m <sup>3</sup> )	Water/day(m <sup>3</sup> )	Gravel/hour (tons)	Gravel/day (ton)
16	17	170	60	600

Since 2 x 16 feet washing pans will be used, the amount of water for the pans will be 34 000 L/hour from which 30% is re-used.

According to the Hydrogeological Investigation report prepared by Mr. Cloete, *the following water uses are recognised as being relevant to the license application:*

- **Section 21(a)** – taking water from a resource.  
 The water will be abstracted from mine excavations for mining purposes.
- **Section 21 (j):** Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people.  
 Based on the on-site groundwater levels, groundwater will be intercepted should mining continue to average resource depth of 3m within low lying areas (river beds).

#### **Water Quality**

According to the Hydrogeological Investigation report prepared by Mr. Cloete, *Groundwater samples were collected from MRF-BH1 and RP-BH3 and represent fresh, clean, relatively young groundwater that has started to undergo magnesium-ion exchange.*

#### **Groundwater Abstraction**

According to the Hydrogeological Investigation report prepared by Mr. Cloete, *a total volume of 44 292.27m<sup>3</sup>/a is available from the borehole. A pump schedule of 14-hours followed by a recovery period of 10 hours is recommended. Due to the current and proposed abstraction the groundwater resource unit is classified as moderately stressed.*

*No access to boreholes on RE/1/ Maraatchesfontein 54 could be obtained due to representative, Mr. Johan Jonker denying access on date agreed upon by the property owner, Ms. Naomie Bothma. A meeting was scheduled with Ms. Bothma on the 9th of November 2021, for the 12th November 2021. Ms. Bothma agreed to the meeting and gave permission to conduct the assessment. Upon arrival on the above-mentioned property, Mr. Jonker denied access and requested a meeting directly with him.*

#### **Dust suppression**

It was the intention of the applicant to implement dust management on site to determine if unacceptable levels of dust fallout occur. Monitoring compliance with the requirements of the National Dust Control Regulations for an activity, in terms of nuisance or disturbance.

The National Framework for Air Quality Management in the Republic of South Africa (the National Framework), as published under Government Notice No. 1144 of 26 October 2018, underpins NEM:AQA by providing national norms and standards for air quality management to ensure compliance with legislation. The National Framework serves as the country's AQMP.

Section 32 of the NEM:AQA makes provision for the Minister or the MEC to prescribe measures for the control of dust in specific places or areas, or by specified machinery or in specific instances. While dust generally does not pose a health risk, it may be regarded as a nuisance. It is the responsibility of the owner of the dust generating activity to take reasonable measures to limit the nuisance factor.

With respect to this, the Minister has published in the gazette the regulations for the control of dust in 2013 (Notice 827, Government Gazette No. 36974). These regulations provide requirements for measures for the control of dust, which includes the requirements for monitoring, dust management plan development and implementation and reporting.

#### **Section 3. Dustfall standard**

**Table 1. Acceptable dust fall rates**

<b>Restriction Areas</b>	<b>Dustfall rate (D) (mg/m<sup>2</sup>/day, 30-day average)</b>	<b>Permitted frequency of exceeding dust fall rate</b>
Residential Area	D < 600	Two within a year, not sequential months

Non-residential Area	600 < D < 1200	Two within a year, not sequential months
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### **Ablution**

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

### **Storage of dangerous goods**

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

Types of lubricants should be dependent on the machines used, this will include diesel, fuel and oil. It should be noted that no more than 80 000 cubes metres of diesel may be stored on site.

### **Prospecting activities and phases**

Please find the Prospecting Work Programme attached as **Appendix 9**.

### **E. POLICY AND LEGISLATIVE CONTEXT**

(a description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;)

TITLE OF LEGISLATION, POLICY OR GUIDELINE:	ADMINISTERING AUTHORITY:	PROMULGATION DATE:
National Environmental Management Act No. 107 of 1998 as amended.	Department of Environmental Affairs	27 November 1998
Constitution of South Africa Act 108 of 1996	National	18 December 1996
The National Heritage Resources Act (Act No. 25 of 1999)	SAHRA	1999
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	Department of Mineral Resources & Energy (DMRE)	2002
National Infrastructure Plan	National	
National Environmental Management: Biodiversity Act No. 10 of 2004	Department of Environmental Affairs	7 June 2004
National Environmental Management Waste Act, 2008 (Act No. 59 of 2008)	National & Provincial	1 July 2009
EIA regulations under NEMA	Department of Environmental Affairs	14 December 2014
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	Department of Agriculture Forestry and Fisheries	1 June 1984



National Environmental Management Air Quality Act, 2004 (Act No. 39 of 2004).	National and Provincial	11 September 2004
National Water Act, 1998 (Act No. 36 of 1998).	National	20 August 1998
North West Province Growth and Development Strategy	Provincial	11 August 2013
Dr Ruth Segomotsi Mompati District Municipality Integrated Development Plan (IDP)	Municipal	March 2016 Term 2016/2017
Mamusa Local Municipality Integrated Development Plan (IDP) Review (Draft)	Municipal	Term 2018/2019
National Forest Act (Act 84 of 1998) (NFA)	National	30 October 1998
National Veld & Forest Fires Act (Act 101 of 1998)	National	27 November 1998



## 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

### HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.

(E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)

#### The Constitution of South Africa (Act No. 108 of 1996)

The Constitution is the supreme law of the Republic and all law and conduct must be consistent with the Constitution. The Chapter on the Bill of Rights contains a number of provisions, which are relevant to securing the protection of the environment. Section 24 states that “everyone has the right to (a) an environment that is not harmful to their health or well-being and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that – (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The Constitution therefore, compels government to give effect to the people’s environmental right and places government under a legal duty to act as a responsible custodian of the countries environment. It compels government to pass legislation and use other measures to protect the environment, to prevent pollution and ecological degradation, promote conservation and secure sustainable development.

#### The National Environmental Management Act (Act No. 107 of 1998)

S24(1) of NEMA  
S28(1) of NEMA

NEMA provides for co-operative governance by establishing principles and procedures for decision-makers on matters affecting the environment. An important function of the Act is to serve as an enabling Act for the promulgation of legislation to effectively address integrated environmental management. Some of the principles in the Act are accountability; affordability; cradle to grave management; equity; integration; open information; polluter pays; subsidiary;

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

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

<b>Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)</b>		<p>The Minerals and Petroleum Resources Development Act identifies the state as the official custodian of South Africa's Mineral and Petroleum Resources. Therefore all activities relating to the reconnaissance, prospecting rights, mining rights, mining permits and retention permits are regulated by the State.</p> <p>A mining permit application has been lodge with the Department of Mineral Resources – Northern Cape Province</p>
<b>National Infrastructure Plan</b>		<p>The National Government adopted a National Infrastructure Plan in 2012. With the plan they aim to transform the South African economic landscape while simultaneously creating significant numbers of new jobs, and strengthening the delivery of basic services.</p> <p>Government will over the three years from 2013/14 invest R827 billion in building and upgrading existing infrastructure.</p> <p>These investments will improve access by South Africans to healthcare facilities, schools, water, sanitation, housing and electrification. On the other hand, investments in the construction of ports, roads, railway systems, electricity plants, hospitals, schools and dams will contribute to faster economic growth.</p> <p>This mining activity will indirectly contribute to the growing of the South African economy by supplying SANRAL with material to build and upgrade road infrastructure.</p>
<b>National Forest Act 84 of 1998</b>		<p>The protection, sustainable management and use of forests and trees within South Africa are provided for under the National Forests Act (Act 84 of 1998).  <b>Prohibition on destruction of trees in natural forests</b>  (1) No person may -  (a) cut, disturb, damage or destroy any indigenous tree in a natural forest; or  (b) possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any tree, or any forest product derived from a tree contemplated in paragraph (a), except in terms of-</p>

		(i) a licence issued under subsection (4) or section 23; or (ii) an exemption from the provisions of this subsection published by the Minister in the <i>Gazette</i> on the advice of the Council.
<b>National Environmental Management: Protected Areas Act 57 of 2003</b>		This Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It also seeks to provide for the sustainable utilization of protected areas and to promote participation of local communities in the management of protected areas.
<b>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)</b>		Section 24S of NEMA deals with the management of residue stockpiles and residue deposits and provides that Residue stockpiles and residue deposits must be deposited and managed in accordance with the provisions of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), on any site demarcated for that purpose in the environmental management plan or environmental management programme in question  The management of residue stockpiles and residue deposits must be done in accordance with any conditions set out and any identified measures in the environmental authorisation issued in terms of NEMA, an environmental management programme and a waste management licence issued in terms of NEMA (Regulation 3(2)).
<b>National Environmental Management: Waste Act, 2008 (Act No. 59 Of 2008) Regulations regarding the Planning &amp; Management of Residue Stockpiles &amp; Residue Deposits from a Prospecting, Mining, Exploration or Production Operation</b>		The purpose of these Regulations is to regulate the planning and management of residue stockpiles and residue deposits from a prospecting, mining, exploration or production operation.

## **F. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.**

(a motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred [location] development footprint within the approved site as contemplated in the accepted scoping report;).

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

## **G. A MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT**

(-within the approved site as contemplated in the accepted scoping report;)

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

### **Location of the site**

The location of the site is preferred due to the presence of shallow diamond. Access will be obtained from existing tar and gravel roads.

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, the possibility to encounter high volumes of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite (DK) including associated infrastructure, structure and earthworks on the remaining extent, remaining extent of portion 1 (fijndoorrens), portion 9 (portion of portion 2) of the farm Maraetchesfontein 54 and remaining extent of portion 4 of the farm Rietput 60, Registration Division: HO, North West Province. were identified.

The proposed area grazing land and is adjacent the Wentzel dam. Where applicable a Water Use License Application will be launched for conducting mining operations. All infrastructure will be temporary and/or mobile.

### **Preferred activity**

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

## **H. A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED DEVELOPMENT FOOTPRINT**

(-within the approved site as contemplated in the accepted scoping report, including;)

### **i) Details of the development footprint alternatives considered;**

#### **• Consideration of alternatives**

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



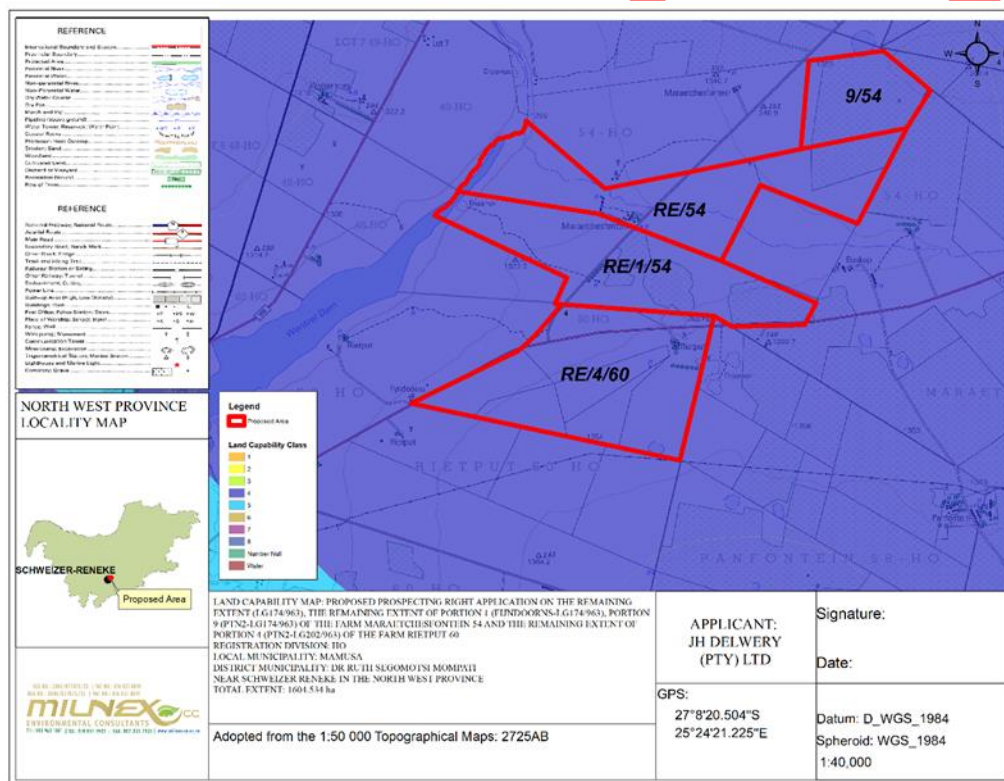
in a single preferred project proposal. The following sections explore each type of alternative in relation to the proposed activity.

- **Location alternatives**

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. No other properties have been secured by **JH Delwery (Pty) Ltd** near Schweizer-Reneke area to potentially mine diamonds alluvial. Also, it is expected that the diamonds alluvial been deposited on this farm and therefore the applicant would like to commence with their prospecting activities.

Land capability is the combination of soil suitability and climate factors. The proposed development falls within **Land in Class IV**; which has limitations that makes it unsuited to cultivation and that restrict its use largely to grazing, woodland or wildlife. In unusual instances some occurrences may be used for special crops under unusual management practices. (AGIS, 2016).

Refer to Land capability map attached as **Appendix 5 & figure 3 below.**



**Figure 3: Land capability**

- **Activity alternatives**

The environmental impact assessment process also needs to consider if the development of an alluvial diamond mine would be the most appropriate land use for the particular site.

Prospecting of other commodities –from the surface and desktop assessment indicates that there are no indications that there are other commodities to be mined on the site, except alluvial diamond.

- **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.

The proposed area grazing land and is adjacent the Wentzel dam. Where applicable a Water Use License Application will be launched for conducting mining operations. All infrastructure will be temporary and/or mobile.

- **Operational alternatives**

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

The 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 purpose of soil sampling. If gravel is found, the applicant will 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 10-18 feet 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.

- **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.

**Technology alternatives**

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

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/cm<sup>3</sup>), 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/cm<sup>3</sup> 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.

## 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.

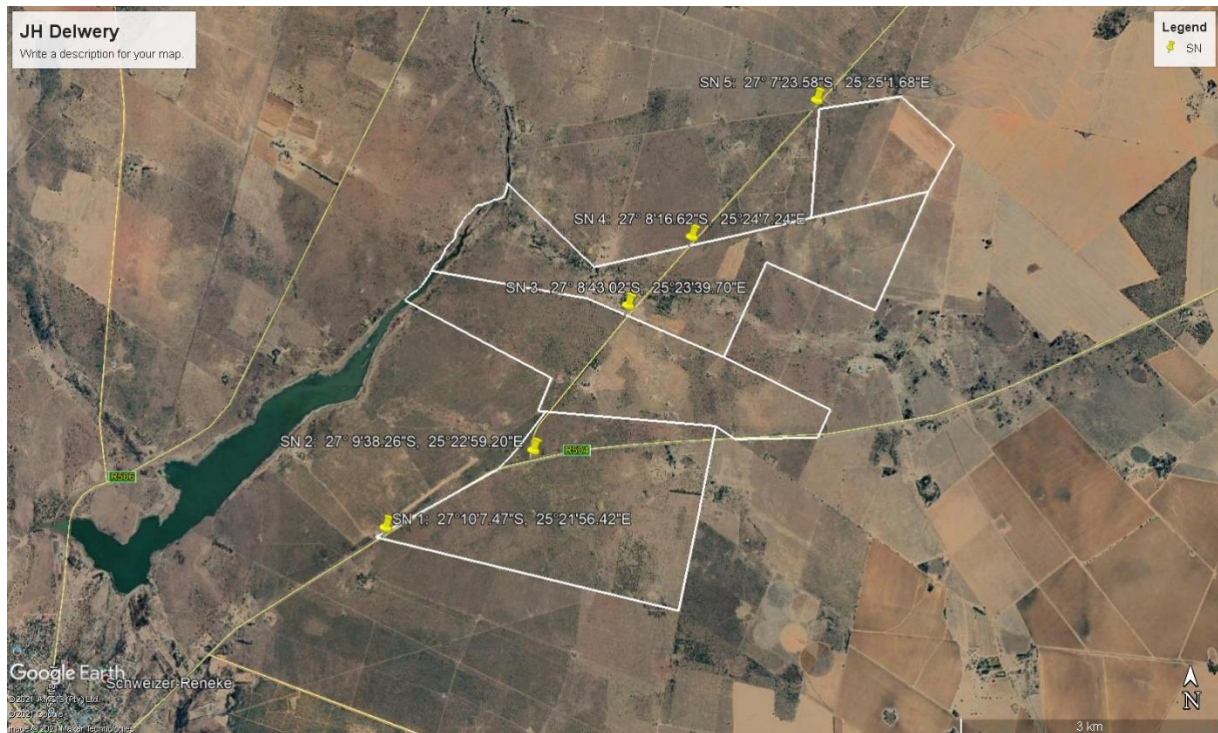
### 1. Advertisement and Notices

#### **NEWSPAPER ADVERTISEMENT**

An advertisement was placed in English in the local newspaper (**Stellalander**) on the **18 August 2021** advertisement (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 CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement.

#### **SITE NOTICES**

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



**Figure 4:** Site notices placement

#### **DIRECT NOTIFICATION AND CIRCULATION OF SCOPING REPORT TO IDENTIFIED I&APS, SURROUNDING LANDOWNERS AND OCCUPIERS**

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 **10 August 2021** and were requested to submit comments by **10 September 2021**. A copy of the report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Friday.

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

#### **LIST OF STAKEHOLDERS, LANDOWNERS, & SURROUNDING LAND OWNERS**

<b>Stakeholders</b>	<b>Land owners</b>	<b>Surrounding Land owner</b>
DMR Department of Mineral Resources & Energy (DMRE), North West Province	Johannes Marthinus Andries Steenekamp	<b>Prospect Belange CC</b>
		Frederick Daniel Jacobs
The Department of Human Settlements, Water & Sanitation (DHSWS)	Naomi Bothma	Nardus Scheepers
Department of Agriculture and Rural Development (DARD)	Jacobus Hendreukis Pienaar	Elsabe Maria Van Heerden
Provincial Heritage Resources Agency (PHRA) North West		<b>Welgenoeg Trust</b>
		Johanna Dannhauser Deale
		Hendrik Jacob Johannes Deale
		Jan Lodewyk Van Der Merwe
Department of Community Safety and Transport Management		Hendrik Johannes Fouche



Stakeholders	Land owners	Surrounding Land owner
Department of Public Works and Roads		Pieter Renier Nieuwoudt
Department of Agriculture Forestry, and Fisheries (DAFF)		<b>JH Delwery (Pty) Ltd</b>
Department of Environment, Forestry, and Fisheries (DEFF)		Jacobus Hendreukis Pienaar
Department of Economic Development, Environment, Conservation and Tourism (DEDECT)		Jacobus Coenraad Lock
Department: Economy and Enterprise Development (DEED)		Jozeph Albertus Du Plessis
Dr Ruth Segomotsi Mompoti District Municipality		Glenda Jonker
		<b>Klerie Fourie Trust</b>
		Josef Markus Fourie
		Jacob Casper Kruger Loubser
		<b>Shosholoza Boys CC</b>
		Barend George Gericke
		Terblanche ( <b>Active member</b> )
		Linda Emmerentia
		Terblanche ( <b>Active Member</b> )
Mamusa Local Municipality (Municipal Manager & Ward councillor)		Marco Smit Trust
SANRAL		Maria Mare Trust
		Abraham Andries Jacobs
		Locklore Trust

#### **Meetings:**

**NB:** The interested and affected parties were given an opportunity to register by circulating, registered letters, press advert and letters.

A note was included that due to COVID-19, any meetings will be conducted virtually via Zoom or Microsoft Teams upon request by the I&APs.

A meeting was held as per request at the Farm Findoorns District, Schweizer Reneke on 16 October 2021 at 10:00am

Present at the meeting was:

- Hennie Kotze – Milnex CC Representative
- Johan Jonker
- Naomi Bothma
- Stony (JMA) Steenekamp
- JH Steenekamp

The following transpired. (Kindly note that the meeting was conducted in Afrikaans and the minutes were later on translated to English)

#### **Objections raised:**

- Communication regarding notice to landowners was not received in time and good and proper decisions could not be reached due to this.

- Applicant did not consult the landowner before submitting the application.

### **Impacts:**

- Heritage
- Geological
- Geohydrological pertaining to underground water
- Archaeological

- These impact studies need to be done, and be made available to the landowners, before submission of final report to the DMRE.
- Landowners insist that should the right be granted to the applicant, rehabilitation should be done in accordance to the standards of the landowners.
- All diggings to be mapped and discussed and signed off by the landowners.

### **Conclusion:**

The meeting was concluded and ended at 12:30

### **Landowner Consent letter**

Me. Naomi Bothma the owner of Maraatchesfontein RE/1/54 signed a consent letter after consultation dated 13 December 2021. Refer to **Appendix 12**

## **DIRECT NOTIFICATION AND CIRCULATION OF DRAFT EIR & EMPr TO IDENTIFIED I&APS, LANDOWNERS AND OCCUPIERS**

Identified I&APs, including key stakeholders representing various sectors, are directly informed of the proposed development and the availability of the Draft EIR & EMPr via registered post on **14 January 2022** and were requested to submit comments by **14 February 2022**. A copy of the report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Friday. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**.

### **Issues Raised by Interested and Affected Parties**

Comments received during this period are attached as comment & response report as well as populated in the table of summary of issues raised.

### 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		ISSUES RAISED	EAPS RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT
LIST THE NAMES OF PERSONS CONSULTED IN THIS COLUMN, AND MARK WITH AN X WHERE THOSE WHO MUST BE CONSULTED WERE IN FACT CONSULTED.			
ORGANISATION	CONTACT PERSON		
LANDOWNER			
Rietput RE/4/60	Johannes Marthinus Andries Steenekamp		<p>An email dated 24/08/2021 was sent in Afrikaans to Mr Steenkamp and is loosely translated as follows:</p> <p>Dear Mr Steenekamp</p> <p>The above matter and telephone consultation between yourself and our offices' Mr Broodryk on the 17th of August 2021 refers.</p> <p>Attached is a writing with Dropbox link, along with comment form for your attention.</p> <p>Please check the content and provide us with any comments, if any.</p> <p>We would like to hear from you.</p> <p><b>Please note that the meaning of the email may be lost in translation as a non-Afrikaans speaking person translated the information.</b></p>



		<p>A responding email was received in Afrikaans on 25/08/2021 and is loosely translated as follows:</p> <p>Dear Mr Broodryk,</p> <p>I hereby acknowledge receipt on 24 August 2021 of your letter (without prejudice to rights) regarding the prospecting right application from JH Delwery on the farm RE / 4 Rietput 60 HO.</p> <p>I hereby also want to put it on record that the Reception on 24 August leaves me with less than the prescribed 30 days before the due date of 10 September 2021, to provide written comments on the “Report”.</p> <p>Furthermore, I would also like to record that the “Report” as provided to me is incomplete, even with regard to the items mentioned in the table of contents and the appendices mentioned. Some of the included files of the report also contain no content. This makes it difficult to comment comprehensively on (essential) aspects that are not (yet) addressed by the report. I hereby also confirm my intention to comment in writing on the report.</p> <p>Without prejudice.</p> <p><b>Please note that the meaning of the email may be lost in translation as a non-Afrikaans speaking person translated the information.</b></p> <p>An email dated 26/08/2021 stated <i>Good day,</i></p> <p><i>Thank you for the draft Scoping Report – will peruse and comment on that.</i></p>	<p>An email sent on 26/08/2021 stated “Dear Mr Steenkamp,</p> <p>Kindly find the draft Scoping report. We have checked the dropboxlink and assume there was a glitch on it. Everything is in order. Kindly notify me if you are still unable to open or access the documents.</p> <p><a href="https://www.dropbox.com/sh/upjkthsw5antk27/AAAiYXb9MhDR5k9YA6Of4r2Da?dl=0">https://www.dropbox.com/sh/upjkthsw5antk27/AAAiYXb9MhDR5k9YA6Of4r2Da?dl=0</a></p> <p>An email dated 26/08/2021 stated “Dear Mr Steenkamp,</p>
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		<p><i>From the previous (electronic) information received, the following is missing:</i></p> <ul style="list-style-type: none"> <li><i>• Appendix 8. Rehab plan – folder is empty</i></li> <li><i>• Appendix 10. Plates – folder is empty</i></li> <li><i>• Appendix 9. Prospecting Works Programme – Appendii referred to in this report are not attached</i></li> </ul> <p><i>Please note that “Drop Box” is not supported by the firewalls of my computer. Please forward files/folders individually or “zipped” max size 20Mb.</i></p> <p><i>Please Note and Record that, to date I was not consulted on the impact the proposed prospecting activities will have on my farming activities.</i></p>	<p>Apologies for the inconvenience. The documents do appear on our side. The zipped folder is too big for our emails. I have attached the requested documents for you”</p>
		<p>An email dated 26/08/2021 stated <i>Good day,</i></p> <p><i>Thank you for the documents. I will peruse and revert.</i></p>	
		<p>An email with comments was received on 09/09/2021 stating “<i>Good day,</i></p> <p><i>Please find attached, my comments as an Interested &amp; Affected Party. My comments were also shared with Me N. Bothma / Mr J. Jonker, who have my full permission to use the material where applicable for the purpose of their commentary. I furthermore concur with the sentiments expressed in the letter by Me N. Bothma / Mr J. Jonker as part of their submission as it equally reflects mine.”</i></p>	<p>A responding email dated 10/09/2021 stated “Comments received.</p> <p>Thank you, Mr Steenkamp. We will include them to our final Scoping report and provide responding comments if any”</p>

		<ol style="list-style-type: none"> <li>1. The relevant documents were only received on 26 August 2021, which left me with only 14 days to prepare comments – less than the minimum of 30 days prescribed.</li> <li>2. Please note that the comments below, specifically refer to the property: RE of Portion 4 of the Farm Rietput 60 HO, but may also be relevant to the other properties as listed.</li> <li>3. The documents provided for comment are considered to be incomplete, which impedes comprehensive comment – please provide complete documents for further comments.</li> <li>4. In the Scoping Report (pp. 42 – 52) no clear distinction is evident between what is required i.t.o. law and regulation, and what the applicant has complied with. (I cannot comment on the laws/requirements.) Please clarify.</li> <li>5. Comments are made, based on the following: <ol style="list-style-type: none"> <li>I. Historical knowledge and information: <ul style="list-style-type: none"> <li>• I am directly acquainted with the property since 1989.</li> <li>• I farms on the property since 2000.</li> <li>• I own the property since 2007.</li> </ul> </li> <li>II. Professional capacity: <ul style="list-style-type: none"> <li>• I am a practicing, registered Professional Geologist - Pr.Sci.Nat. 400071/98.</li> </ul> </li> </ol> </li> <li>6. Specific comments are attached to this document: <ol style="list-style-type: none"> <li>I. Comments on the draft EIA Scoping Document provided.</li> <li>II. Comments on the Prospecting Works Programme provided.</li> <li>III. Comments on the Rehabilitation Plan provided.</li> </ol> </li> <li>7. The right to comment on any (proposed) EMPr is reserved.</li> <li>8. All comments are made without prejudice of any rights.</li> </ol> <p style="text-align: right;"><i>[Signature]</i> 9/9/2021</p>	
		<p><i>Comments received on 09/09/2021 were on the Draft Scoping, PWP and the Rehab &amp; Closure Plan.</i></p> <p><b>I. Comments – EIA Scoping document</b></p>	<p>A responding letter dated 15/09/2021 was sent on 16/09/2021 and it stated the below</p> <p>We act on behalf of JH Delwery (Pty) Ltd.</p> <p><b>COMMENTS – EIA SCOPING DOCUMENT</b></p> <p>Our response for your letter dated on 9 September 2021. Our response is as follows:</p> <p><b>Item 1:</b></p> <p>The activity to be undertaken is prospecting. Prospecting is defined as the intentional searching for any mineral by means of any method</p> <ol style="list-style-type: none"> <li>a) which disturbs the surface or subsurface of the earth, including any portion of the earth that is under the sea or under other water; or</li> <li>b) in or on any residue stockpile or residue deposit, in order to establish the</li> </ol>

Item	Reference	Item	Comment
1.	p.8, Fig 2	Site Plan	No site layout indicated – only legend given
2.	p.9, i)	Plan to Scale & Appendix 4	Not provided
3.	p.9, 4.	Water removal	No details provided
4.	p.9, 5.	Clearance of indigenous vegetation	No details provided
5.	p.9, 8.	Residue stockpiles	Not mentioned or details provided
6.	p.14	Appointed Project Geologist	F.J.G. Putter or Pierre de Jager? c.f. PWP p.8. Please provide CV of appointed Geologist.
7.	p.14	Pitting – total disturbed area	Area around pits & trenches and access travel to, disturbed by machinery not accounted for.
8.	p.14	Trenches	Sample size differ from PWP
9.	p.15	Disturbed area	No mention made off area disturbed around trenches, pathways to trenches and for wash plant placement and hard park areas for machinery & equipment.
13.	p.16	Water uses	No mention is made of water source for all activities or quantities used for dust suppression.
11.	p.16	Dust fall rates	No mention of how dust levels will be monitored.
12.	p.17	Storage of dangerous goods	"80 000 cubes metres of diesel" will require specialised storage – no mention made.
13.	p.18, h)	"originally proposed site plan"	Not provided
14.	p.18, h)	Appendix 3	Not provided
15.	p.18, i)	Appendix 4, alternatives provided	Not provided
16.	p.19, (a)	"previous studies" - "high volumes of diamonds"	Please provide – contrary to personal & common knowledge.
17.	p.19, (c)	Water Use Licence Application	What source is envisaged? No details provided.
18.	p.19, (d)	"rotary pan(s)"	Where are these to be set up? EIA for that not provided.
19.	p.20, (e)	EMPR	Not provided
20.	p.20, (f)	"valuable information" to be lost	It is common knowledge that grades were low where the most prospective areas have been mined out in the past.
21.	p.20, ii)	"...sufficient detail (on) impact (of) the activities..."	Not provided
22.	p.21 & 22	Appendix 6	Not provided
23.	p.28	Sedimentary Rocks	The mentioned rocks do not occur on the property.
24.	p.29	Appendix 5	Not provided
25.	p.32	Cultural and heritage aspects	Neolithic cultural and heritage sites are known to exist on the property. Is J.H. Delwery qualified or capable to recognise such sites? The sites should be fully studied, documented and assessed before the further processing of this application.
26.	p.33, Fig 9	Low Cultural and Heritage aspects	The area is indicated as to be low (sensitivity?) with regards to cultural and heritage aspects. This is disputed and considered to be high.
27.	p.35, (c)	Description of specific environmental features and infrastructure on the site.	"The proposed area consists woodland, ...." No mention is made of existing homestead, dwellings, shed and cattle handling facilities, etc.

existence of any mineral and to determine the extent and economic value thereof; or

c) in the sea or other water on land; (MPRDA, 2002:13)

Therefore, there will not be a specific layout map with the exact areas to be worked on

#### **Item 2:**

Appendix 4 was provided which is figure 2 on the draft Scoping report (SR)

#### **Item 3:**

These are listed activities according to National Environmental Management Act (NEMA) EIA Regulations

#### **Item 4:**

These are listed activities according to National Environmental Management Act (NEMA) EIA Regulations

#### **Item 5:**

These are listed activities according to National Environmental Management Waste Act (NEM: WA)

#### **Item 6:**

CV will be made available.

#### **Item 7:**

Since the application area is 1604.534ha, the roads are accounted for and associated infrastructure within the application area

#### **Item 8:**

28.	p.35, iii.	Impacts identified	The impacts on Heritage sites and Farming activities were not identified or addressed.
29.	p.35, iv.	Methodology used in determining the significance of environmental impacts	Not addressed.
30.	p.36 – p.37	Checklist analysis – Table:	The assessment of the following items on the checklist is strongly disputed and need to be amended/addressed: 1. VI., IX., 2. IV., V., IX., 3. III., VI., VIII.
31.	p.38 – p.41	Matrix Analysis	The rating of the following items on the matrix is strongly disputed and need to be revised/addressed: Construction Phase: Ground water, Health & safety. Operational Phase: Soil, Surface water, Visual landscape, Traffic volumes, Health & Safety, Heritage resources. Decommissioning Phase: Health & Safety.
32.	p.42, v.	The positive and negative impacts.....	Still to be assessed before comments can be made.
33.	p.42, vi.	Possible mitigation measures.....	Still to be assessed before comments can be made.
34.	p.42, viii.	Motivation where no alternative.....	Still to be assessed before comments can be made. Please provide information on “previous studies” – contrary to personal & common knowledge.
35.	p.43, (i) i.	“..... significant loss of valuable information regarding the mineral status .....”	Statement strongly disputed – the opposite can be considered to be common knowledge. References can be provided.
36.	p.43, Table	“BGIS data, site visits”	Mention is made of BGIS data – please provide. No site visits were done on my property with my permission to access.
37.	p.43, iii. (p.44)	Description of aspects to be assessed by specialists	Cultural and heritage sites should be assessed by specialists.
38.	p.47, vii., 1.	“.....ensure consultation with affected parties ...” “A minimum of 30 days commenting period.....”	To date, no Proper consultation has been done.  Since receipt of documents (26/8/2021) to cut-off date was less than thirty days – objection.
39.	p.47, vii., 2., Table	Landowner consultation – (Consent letter)	No consultation in this regard was done. No such letter exists.
40.	p.47, vii., 2., Table	Meetings	Such meetings are requested (Microsoft Teams & In Person if required).
41.	p.48, viii.	Tasks to be undertaken	No information on tasks mentioned has been provided. Comments are reserved until information is provided.
42.		No mention is made of the digging/construction and management or securing of “puddle” storage facilities (A. porrelgate).	Please address (also in terms of safety to man and beast).
43.		No mention is made of access control in terms of safety and farming activities of the landowner(s) and tenants.	Please address.

Page 12 of the PWP indicated that the trenches are 40 m long x 30 m wide x 3 m deep and the draft SR indicate the same

**Item 9:**

As mentioned on item 1 this is a prospecting application therefore no specific locations can be given as the applicant will establish this as they work from one point to another

**Item 13:**

No quantities for dust can be predicted and known yet as seasons are not the same and the amount of dust to be generated and frequency will indicate how water can be used

**Item 11:**

Dust will be monitored and different methods will be investigated such as dust buckets.

**Item 12:**

It should be noted that no more than 80 000 cubes metres of diesel may be stored on site.

**Item 13:**

Figure 4 is provided for what will be on site

**Item 14:**

Appendix 3 was provided which is figure 1 on the draft Scoping report (SR)

**Item 15:**

There are no alternatives considered since this area is the preferred by the applicant

**Item 16:**

This is based on the geological map that justifies the description why there is a



## II. Comments – Prospecting Work Programme

Item	Reference	Item	Comment
1.	p.5-6., 4.2	Description why the Geolocal.....	The description provides no conclusive evidence of any relationship between the underlying Alanridge Formation lava and the occurrence of diamonds. No “...Dwyka Group tillite....” Occurs on the property. Undisclosed “In house information exist.....” – needs to be provided in order to be assessed before it can be commented on.
2.	p.6., 4.3	Attach a Geological map that justifies.....	The attached map indicates no “...current river channels, terraces or banks....” on the properties: RE portion 4 of the Farm Rietput, as inferred in section 4.2 preceding.
3.	p.8., 5.2, Para. 3	PITTING	The term “.... locked.....” is assumed to be/mean “logged” having the geological meaning equivalent of “mapped and recorded”.
4.	p.9., Para. 4 (& 6)	“...grades expected to be very low.....”	This statement concurs with previous experience (and is endorsed), and thus relegate this application to low importance and; as such the application is considered to be opportunistic.
5.	p.9., Para. 8 (& 6)	“...strip mining process....” (“...mining plan.....”)	These statements allude to Mining being carried out during Exploration activities (on a PR ?)
6.	p.10., Para. 5	Screening plant & Processing plant	No indication is given where these plants will be located and the impacts of transport to these plants are not addressed. Will the discards from these plants be returned to the original excavations?
7.	p.10., Para. 5	“...bulk sampling shall take approximately 15 months.”	At what stage will rehabilitation commence?
8.	p.10., 5.3	inferred and indicated diamond resources	Please provide the parameters for the classification of these “resources”.
9.	p.14., (ii)	Description of planned invasive activities:	No mention is made of the digging/construction of “puddle” storage facilities (A. porrelgate)
10.	p.17., Table 6.1	Dimensions and Volumes	Figures stated do not correspond with figures quote elsewhere in the document c.f. pp. 10 & 12.
11.	p.18., 7.3.1	Annexures “C, D, E”	Not attached – please provide.
12.	p.19., 7	Details with documentary proof....	Annexures “F & G” not attached –please provide.

## III. Comments – Rehabilitation and Closure plan

possibility that the minerals applied for could occur on the land. Refer to figure 1.

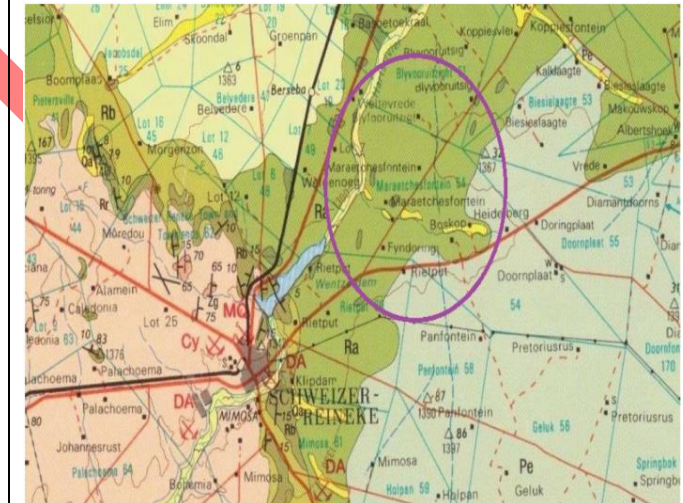


Figure 1: Geological map of the area

### Item 17:

Source of water is not known yet.

### Item 18:

As mentioned on item 1 this is a prospecting application therefore no specific locations can be given as the applicant will establish this as they work from one point to another

### Item 19:

This is a draft Scoping phase and phase for an EIR & EMPr will follow and this document will be made available

### Item 20:

Noted



Item	Reference	Item	Comment
1.		general	In the present format, as provided, the Plan is very generic as the proposed actions almost exclusively refers to "riparian zones & wetlands" and the Vaal river, which has very little relevance to the property under discussion. As presented the report appears to be a poorly reworked "copy & paste" version of another report.
2.	p.3.	Sensitive habitats and landscapes	"The application is situated adjacent the Vaal river....." What about the woodlands and natural grazing on the properties under discussion – barely mentioned!!
3.	p.8.	Rehabilitation and Closure Plan	No mention of when rehabilitation will start.
3.	p.17., Table 2	Post-rehabilitation.....	Refers only to riparian and wetland habitat.
4.		"puddle" storage facilities (A. porrelgate)	Not addressed
5.		Plant discard dumps	Not addressed
6.		Potential oil, fuel and chemical spills during operations.	Not addressed
7.		Detail	A much more detailed rehabilitation plan is requested.

#### **Item 21:**

The information was provided on SR page 21 -23

#### **Item 22:**

It was provided on the dropbox link sent as it was too big to send over email and this was indicated on an email sent that the zip files are too big to send over email.

#### **Item 23:**

Noted

#### **Item 24:**

It was provided on the dropbox link sent as it was too big to send over email and this was indicated on an email sent that the zip files are too big to send over email.

#### **Item 25:**

Your comment on Heritage aspect is noted

#### **Item 26:**

The low sensitivity is indicated by the Department of Environmental Affairs (DEA) screening tool used and it is mandatory for us to use the tool, however your comment is noted.

#### **Item 27:**

Noted

#### **Item 28:**

Noted. This will be addressed in the EIAr and EMPr

#### **Item 29:**

Noted. This will be addressed in the EIAr and EMPr

			<p><b><u>Item 30:</u></b> Noted</p> <p><b><u>Item 31:</u></b> Noted</p> <p><b><u>Item 32:</u></b> Noted. This will be addressed in the EIAr and EMPr</p> <p><b><u>Item 33:</u></b> Noted. This will be addressed in the EIAr and EMPr</p> <p><b><u>Item 34:</u></b> Noted</p> <p><b><u>Item 35:</u></b> Noted</p> <p><b><u>Item 36:</u></b> Noted</p> <p><b><u>Item 37:</u></b> Noted</p> <p><b><u>Item 38:</u></b> Mr. Werner Broodryk initiated the consultation process on 17th of August 2021 telephonically and has been in contact with emails with regards to the application.</p> <p><b><u>Item 39:</u></b> Mr. Werner Broodryk initiated the consultation process on 17 August 2021 telephonically. Once all logistics and comments are sorted a consent letter will be done.</p> <p><b><u>Item 40:</u></b></p>
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			<p>The request is noted and you will be provided with possible dates for meeting. This will be either on Teams, Zoom or in person.</p> <p><b><u>Item 41:</u></b> Noted</p> <p><b><u>Item 42:</u></b> Noted. This will be addressed in the EIAR and EMPr</p> <p><b><u>Item 43:</u></b> Noted. This will be addressed in the EIR and EMPr</p> <p><b>II. COMMENTS – PROSPECTING WORK PROGRAMME</b></p> <p>Answers to this section will be sent</p> <p><b>III. COMMENTS – REHABILITATION AND CLOSURE PLAN</b></p> <p>Comments on the Rehabilitation and Closure Plan are noted</p>
<b>Maraetchesfontein RE/1/54</b>	Johan Jonker (On behalf of Naomi. Bothma)	<p>Same comments were received as those raised by Mr Steenekamp on 10/09/2021. The email stated</p> <p>Good day mr. Japie Loubsher,</p> <p>Please find. per attachment of comments at the request of diggers rights on my mother-in-law,</p>	<p>A responding letter dated 15/09/2021 was sent on 16/09/2021 and it stated the below</p> <p>We act on behalf of JH Delwery (Pty) Ltd.</p> <p><b>I. COMMENTS – EIA SCOPING DOCUMENT</b></p>

		<p>Mrs. N. Bothma's land as stated. All further correspondence can be sent to the address.</p> <p>Other comments received were in Afrikaans and translated as far as possible.</p> <p><b>Please note that the meaning of the email may be lost in translation as a non-Afrikaans speaking person translated the information.</b></p>	<p>Our response for your letter dated on 9 September 2021 which was the same as Mr. Steenkamp. Our response is as follows:</p> <p><b>Item 1:</b> The activity to be undertaken is prospecting. Prospecting is defined as the intentional searching for any mineral by means of any method</p> <ul style="list-style-type: none"> <li>d) which disturbs the surface or subsurface of the earth, including any portion of the earth that is under the sea or under other water; or</li> <li>e) in or on any residue stockpile or residue deposit, in order to establish the existence of any mineral and to determine the extent and economic value thereof; or</li> <li>f) in the sea or other water on land; (MPRDA, 2002:13)</li> </ul> <p>Therefore, there will not be a specific layout map with the exact areas to be worked on</p> <p><b>Item 2:</b> Appendix 4 was provided which is figure 2 on the draft Scoping report (SR)</p> <p><b>Item 3:</b> These are listed activities according to National Environmental Management Act (NEMA) EIA Regulations</p>
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			<p><b><u>Item 4:</u></b> These are listed activities according to National Environmental Management Act (NEMA) EIA Regulations</p> <p><b><u>Item 5:</u></b> These are listed activities according to National Environmental Management Waste Act (NEM: WA)</p> <p><b><u>Item 6:</u></b> CV will be made available.</p> <p><b><u>Item 7:</u></b> Since the application area is 1604.534ha, the roads are accounted for and associated infrastructure within the application area</p> <p><b><u>Item 8:</u></b> Page 12 of the PWP indicated that the trenches are 40 m long x 30 m wide x 3 m deep and the draft SR indicate the same</p> <p><b><u>Item 9:</u></b> As mentioned on item 1 this is a prospecting application therefore no specific locations can be given as the applicant will establish this as they work from one point to another</p> <p><b><u>Item 13:</u></b> No quantities for dust can be predicted and known yet as seasons are not the same and the amount of dust to be generated and frequency will indicate how water can be used</p> <p><b><u>Item 11:</u></b></p>
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			<p>Dust will be monitored and different methods will be investigated such as dust buckets.</p> <p><b>Item 12:</b> It should be noted that no more than 80 000 cubes metres of diesel may be stored on site.</p> <p><b>Item 13:</b> Figure 4 is provided for what will be on site</p> <p><b>Item 14:</b> Appendix 3 was provided which is figure 1 on the draft Scoping report (SR)</p> <p><b>Item 15:</b> There are no alternatives considered since this area is the preferred by the applicant</p> <p><b>Item 16:</b> This is based on the geological map that justifies the description why there is a possibility that the minerals applied for could occur on the land. Refer to figure 1.</p>
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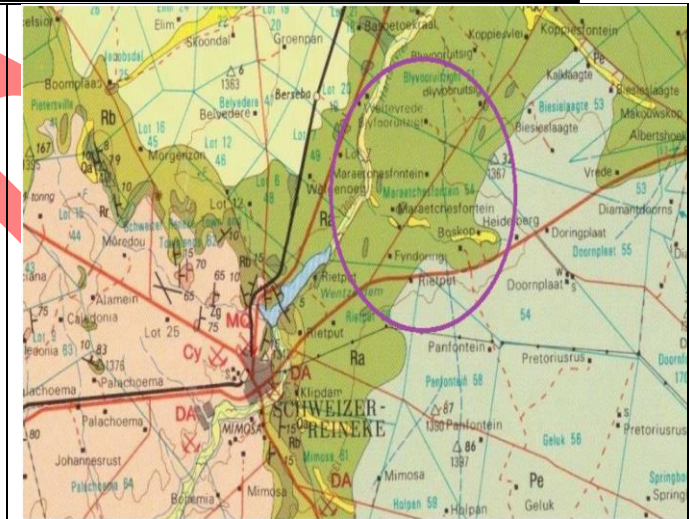


Figure 1: Geological map of the area

**Item 17:**

Source of water is not known yet.

**Item 18:**

As mentioned on item 1 this is a prospecting application therefore no specific locations can be given as the applicant will establish this as they work from one point to another

**Item 19:**

This is a draft Scoping phase and phase for an EIR & EMPr will follow and this document will be made available

**Item 20:**

Noted

**Item 21:**

The information was provided on SR page 21  
-23

			<p><b><u>Item 22:</u></b> It was provided on the dropbox link sent as it was too big to send over email and this was indicated on an email sent that the zip files are too big to send over email.</p> <p><b><u>Item 23:</u></b> Noted</p> <p><b><u>Item 24:</u></b> It was provided on the dropbox link sent as it was too big to send over email and this was indicated on an email sent that the zip files are too big to send over email.</p> <p><b><u>Item 25:</u></b> Your comment on Heritage aspect is noted</p> <p><b><u>Item 26:</u></b> The low sensitivity is indicated by the Department of Environmental Affairs (DEA) screening tool used and it is mandatory for us to use the tool, however your comment is noted.</p> <p><b><u>Item 27:</u></b> Noted</p> <p><b><u>Item 28:</u></b> Noted. This will be addressed in the EIAr and EMPr</p> <p><b><u>Item 29:</u></b> Noted. This will be addressed in the EIAr and EMPr</p> <p><b><u>Item 30:</u></b> Noted</p> <p><b><u>Item 31:</u></b></p>
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			<p>Noted</p> <p><b><u>Item 32:</u></b> Noted. This will be addressed in the EIAr and EMPr</p> <p><b><u>Item 33:</u></b> Noted. This will be addressed in the EIAr and EMPr</p> <p><b><u>Item 34:</u></b> Noted</p> <p><b><u>Item 35:</u></b> Noted</p> <p><b><u>Item 36:</u></b> Noted</p> <p><b><u>Item 37:</u></b> Noted</p> <p><b><u>Item 38:</u></b> Mr. Werner Broodryk initiated the consultation process on 17th of August 2021 telephonically and has been in contact with emails with regards to the application.</p> <p><b><u>Item 39:</u></b> Mr. Werner Broodryk initiated the consultation process on 17 August 2021 telephonically. Once all logistics and comments are sorted a consent letter will be done.</p> <p><b><u>Item 40:</u></b> The request is noted and you will be provided with possible dates for meeting. This will be either on Teams, Zoom or in person.</p> <p><b><u>Item 41:</u></b></p>
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			<p>Noted</p> <p><b>Item 42:</b> Noted. This will be addressed in the EIAr and EMPr</p> <p><b>Item 43:</b> Noted. This will be addressed in the EIR and EMPr</p> <p><b>II. COMMENTS – PROSPECTING WORK PROGRAMME</b></p> <p>Answers to this section will be sent</p> <p><b>III. COMMENTS – REHABILITATION AND CLOSURE PLAN</b></p> <p>Comments on the Rehabilitation and Closure Plan are noted</p>
	<p><b>Correspondence between Milnex CC representative, Johan &amp; Mr Steenkamp</b></p> <p><b>NB: Kindly note that the emails were Afrikaans and the EAP is English speaking and use google translate to translate to English</b></p>		
			<p>Email dated 11 October 2021 is translated as follows:</p> <p>Dear Johan</p> <p>We refer to the telephone conversation between yourself and our offices' Mr Broodryk earlier today.</p> <p>You mentioned that you would talk to Mr Steenekamp to find out if he could be present,</p>

			<p>should we schedule a meeting on the above matter.</p> <p>You mentioned that you can not meet via Zoom, because your internet is not sufficient to meet in such a way.</p> <p>We would love to hear more from you, as well as possible dates to meet.</p> <p>We can also suggest that if we meet with you, that Mr Steenekamp attend the meeting via Zoom, if it is not convenient for him to attend the meeting in person.</p> <p>We would love to hear more.</p>
		<p>Email dated 12 October 2021 is translated as follows:</p> <p>Dear Werner Broodryk,</p> <p>Following our telephone conversation yesterday and receiving the attached email, I telephoned Mr. Steenekamp and we will speak to you at my house, Plaas Fyndoorns, Schwaizer Reneke on Saturday the 16th of October 2021 at 10:00 am.</p> <p>Thank you very much.</p>	
		<p>Email dated 12 October 2021 is translated as follows:</p> <p>Good morning Johan, Werner,</p> <p>Thank you very much for your email and communication. The proposed meeting is in order with me and will be attended by DV as indicated.</p>	<p>Email dated 12 October 2021 is translated as follows:</p> <p>Dear gentlemen</p> <p>We acknowledge receipt of the emails below.</p> <p>We confirm that the meeting is in order on Saturday the 16th of October 2021 at 10:00 am and a Milnex representative will meet you.</p> <p>We trust that the aforesaid is in order.</p>

		<p>Email dated 11 November 2021 is translated as follows:</p> <p>Good afternoon,</p> <p>With reference to the above meeting, as confirmed below, I would like to bring it to your attention that the meeting did take place as agreed. Several issues were discussed and requests were directed. After that, a handwritten minute was submitted to us for signature by everyone present. It was then orally agreed that the signed document would serve as an attendance list and that a typed version would be sent to us for notice and possible acceptance (or adjustment if necessary) to serve as formal Minutes and faithful version of the discussions that took place serve.</p> <p>To date, no such document / Minutes have been received. The lapse of time so far is considered reasonable for Milnex to be able to provide the required document (Minutes). Therefore, it is stated to you that until and unless the typed Minutes are provided together with a copy of the handwritten document, the handwritten document will not be considered Accepted Minutes - without prejudice to any rights or waiver of requests and claims made. during the meeting.</p> <p>I trust to receive your feedback in this regard soon.</p>	<p>Email dated 12 November 2021 was sent stating the following:</p> <p>Dear Mr Steenkamp.</p> <p>Kindly find the find the attached</p> <p>NB: Please note that the content of the Afrikaans minutes of the meeting were translated by a non-Afrikaans speaking person therefore the meaning or information may be lost in translation.</p>
<b>JH Delwery (Pty) Ltd</b>			
<b>Maraetchesfontein RE/54 &amp; 9/54</b>	Jacobus Hendreukis Pienaar		
<b>SURROUNDING LANDOWNERS</b>			
<b>Prospect Belange CC</b>		No comments received yet	
<b>Rietput 9/60</b>	Frederick Daniel Jacobs (Active Member)	No comments received yet	
<b>Rietput 18/60</b>	Nardus Scheepers		



<b>Maraetchesfontein 16/54 &amp; Rietput 5/60</b>	Elsabe Maria Van Heerden		
<b>Welgenoeg Trust</b>			
<b>Koppie Alleen 8/221</b>	Johanna Dannhauser Deale		
	Hendrik Jacob Johannes Deale		
	Jan Lodewyk Van Der Merwe		
<b>Maraetchesfontein RE/2/54</b>	Hendrik Johannes Fouche		
<b>Maraetchesfontein RE/12/54</b>	Pieter Renier Nieuwoudt		
<b>JH Delwery (Pty) Ltd</b>			
<b>Maraetchesfontein 19/54</b>	Jacobus Hendreukis Pienaar		
<b>Maraetchesfontein 20/54 &amp; Doornplaat 2/55</b>	Jacobus Coenraad Lock		
<b>Maraetchesfontein 22/54</b>	Jozeph Albertus Du Plessis		
<b>Maraetchesfontein 23/54</b>	Glenda Jonker		
<b>Kierie Fourie Trust</b>			
<b>Panfontein RE/1/58</b>	Josef Markus Fourie		
	Jacob Casper Kruger Loubser		
<b>Shosholoza Boys CC</b>			
<b>Panfontein 8/58</b>	Barend George Gericke Terblanche ( <b>Active member</b> )		
	Linda Emmerentia Terblanche ( <b>Active Member</b> )		

<b>LOT6 1/48</b>	Marco Smit Trust		
<b>Maraetchesfontein 5/54</b>	Maria Mare Trust		
<b>Panfontein RE/3/58</b>	Abraham Andries Jacobs		
<b>Maraetchesfontein RE/4/54</b>	Locklore Trust		
<b>Mamusa Local Municipality</b>	<b>Municipal Manager:</b> To whom it may concern		
<b>Ward 7 Councillor</b>	Ward Councillor		
<b>Department of Mineral Resources &amp; Energy (DMRE) North West Province</b>	Mutali Mulaudzi	Letter dated 02/07/2021 Acknowledged the EA application submitted	
	L Masibi	Letter dated 04/08/2021 accepted the application of the mineral right.	
	Mutali Mulaudzi		Letter dated 30 November 2021 was sent to the department requesting timeframe extension
	Mutali Mulaudzi	Letter dated 06/12/2021 granted the timeframe extension request	
<b>Department of Economic Development, Environment, Conservation and Tourism (DEDECT)</b>	Ouma Skosana		
<b>The Department of Human Settlements, Water &amp; Sanitation (DHSWS)</b>  Lower Vaal	Alexia Hlengsani		
<b>Department of Agriculture and Rural Development (DARD)</b>	Head of Department Dr P Mokaila		
<b>Provincial Heritage Resources Agency (PHRA) North West</b>	Mr. Motlhabane Mosiane		

<b>Department of Community Safety and Transport Management</b>	Head of Department Ms. B Mofokeng		
<b>Department of Public Works and Roads</b>	Head of Department: Mr. P Mothupi		
<b>Department of Agriculture Forestry and Fisheries (DAFF)</b>	Mr. Maurice Vukeya & Mrs Mpho Gumula		
<b>Department of Environment, Forestry and Fisheries (DEFF)</b>	To Whom It May Concern		
<b>Department of Agriculture, Land Reform and Rural Development</b>	Land Claims Commissioner: Regional Offices, Chief Director: Mr Lengane Bogatsu		Email sent 31/05/2021 enquired the Department to clarify on if there are any land claims lodged on the applied for properties.
		An Acknowledgement letter dated 02/06/2020 was received from the department	
		Email received 17/06/2021 with land claims letter dated 15/06/2021.	
		The letter states the following: No land claims appear on the database of claims lodged between 1 July 2014 and 24 July 2016 in terms of the Restitution of Land Rights Amendment Act, of 2014 for the following portions on the remaining extent, remaining extent of portion 1 (fijndoorns), portion 9 (portion of portion 2) of the farm Maraetchesfontein 54.  However, remaining extent of portion 4 of the farm Rietput 60 the claims were lodged under Mamusa Local Municipality within Dr Ruth Segomotsi Mompati.	
<b>SANRAL</b>		No comments received yet	

Milnex CC: EIA496 –EIR & EMPr: The Prospecting Right of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite (DK) including associated infrastructure, structure and earthworks on the remaining extent, remaining extent of portion 1 (fijndoorns), portion 9 (portion of portion 2) of the farm Maraetchesfontein 54 and remaining extent of portion 4 of the farm Rietput 60, Registration Division: HO, North West Province

<b>OTHER–</b>			
<b>Dr Ruth Segomotsi Mompoti District Municipality</b>	Municipal Manager: Mr. Jerry Mononela		
<b>WESSA (National Office)</b>	John Wesson		

DRAFT

**iv) the environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;**

**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.



**Figure 5:** Application area in conjunction with the Wentzel dam

According to the **DEA Screening Report** the Environmental Sensitivity of the proposed area is as follows:

*The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed*

THEME	VERY HIGH SENSITIVITY	HIGH SENSITIVITY	MEDIUM SENSITIVITY	LOW SENSITIVITY
Agriculture Theme		<b>X</b>		
Animal Species Theme		<b>X</b>		
Aquatic Biodiversity Theme	<b>X</b>			
Archaeological and Cultural Heritage Theme		<b>X</b>		
Civil Aviation Theme		<b>X</b>		
Defence Theme				<b>X</b>
Paleontology Theme		<b>X</b>		
Plant Species Theme			<b>X</b>	
Terrestrial Biodiversity Theme	<b>X</b>			







### **Mineralogy**

The dark-green lava, which is by far the most prominent unit in the Allanridge formation, also constitutes the greater part of the Ventersdorp Supergroup in the area. The lava is fine to medium grained in texture and the plagioclase and augite in it have been replaced by secondary minerals, such as chlorite, epidote, calcite sericite and urallite. The amygdals in the lava consist of quartz, chalcedony, calcite, chlorite or epidote, or any combination of these minerals. Where more than one mineral makes up an amygdal, the minerals commonly form concentric zones.

### **Sedimentary Rocks**

The sedimentary rocks of the Allanridge formation consist of a mixture of tuff, agglomerate and volcanic breccia occur interbedded with the lava towards the top of the formation.

### **Results of the environmental sensitivity of the proposed area (Screening tool)**

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification.

### **Regional Vegetation Assessment**

According to the desktop Watercourse Delineation and Ecological Impact Assessment Report, *the proposed site for mining overlaps within the Savanna Biome (Mucina & Rutherford 2006). Biomes are further divided into bioregions, which are spatial terrestrial units possessing similar biotic and physical features, and processes at a regional scale. The study site overlaps with the Eastern Kalahari Bushveld Bioregion (Figure 7).*

**Table** below provides an overview of the vegetation type associated with the bioregion within the study site. The study site overlaps the endangered Schweizer-Reneke Bushveld (SVk3).

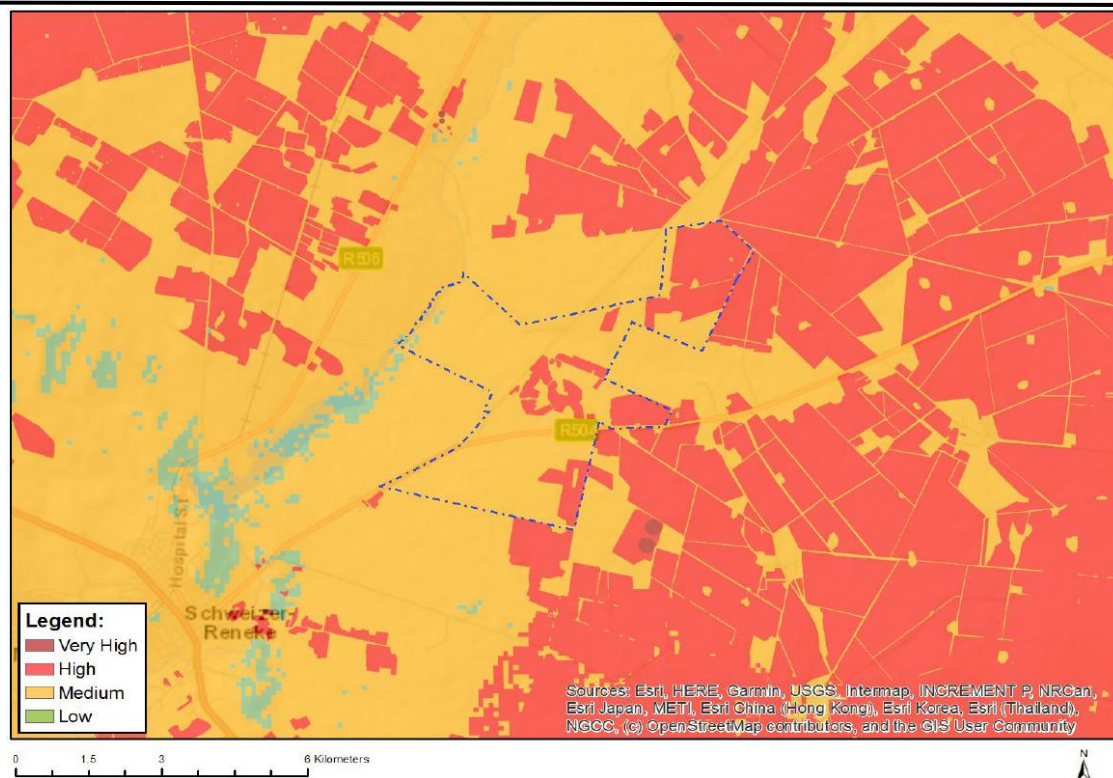
**Table:** Vegetation types and their ecological importance

<b>Vegetation Type</b>		<b>Biome</b>	<b>Bioregion</b>	<b>Conservation Status</b>
Sweizer-Reneke Bushveld (SVk3)		Savanna	Eastern Kalahari Bushveld Bioregion	Endangered 16% Target 0% Protected 42% Transformed

[illegible]

## **AGRICULTURE THEME SENSITIVITY**

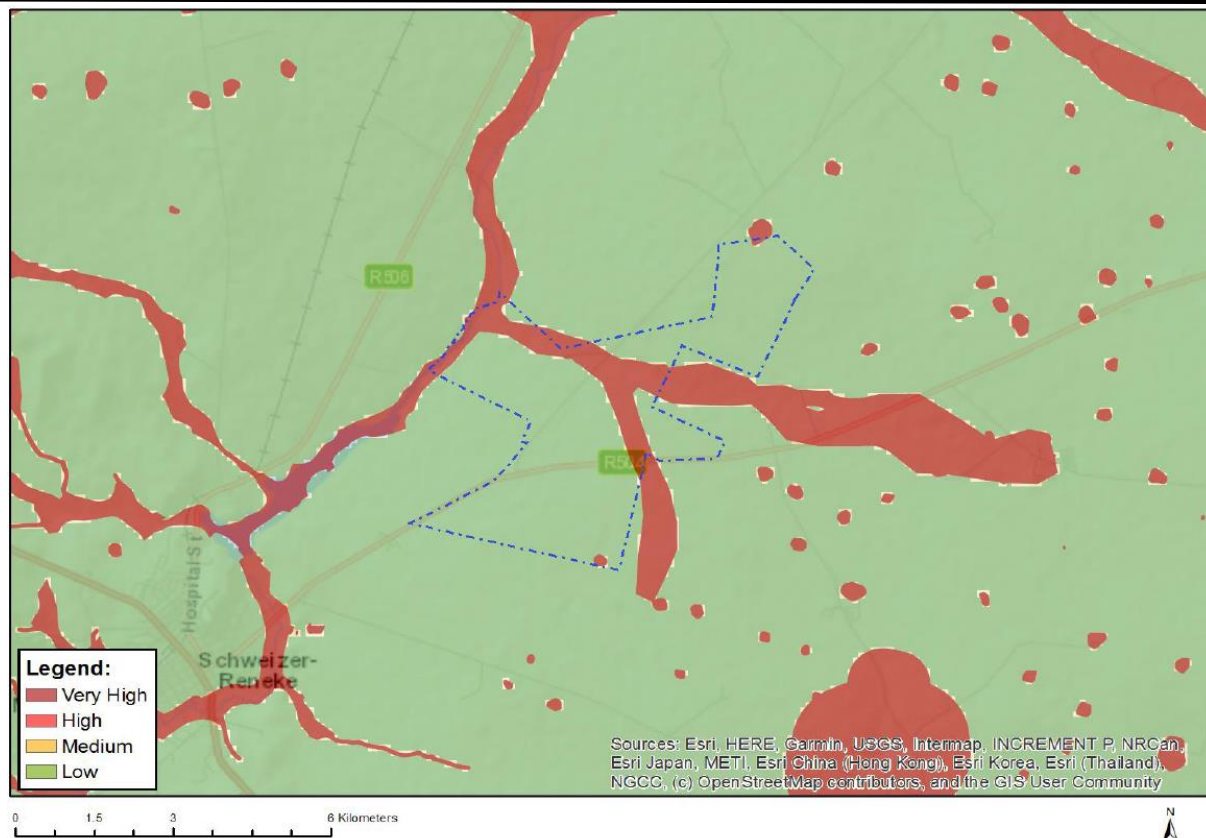
58



**Figure 8: Agriculture Theme Sensitivity Map**

### **AQUATIC BIODIVERSITY THEME SENSITIVITY**

The Aquatic Biodiversity Theme Sensitivity of the area is low and some parts of the application area have a high Aquatic Biodiversity Sensitivity and depicted on Figure 9 below.



**Figure 9: Aquatic Biodiversity Theme Sensitivity**

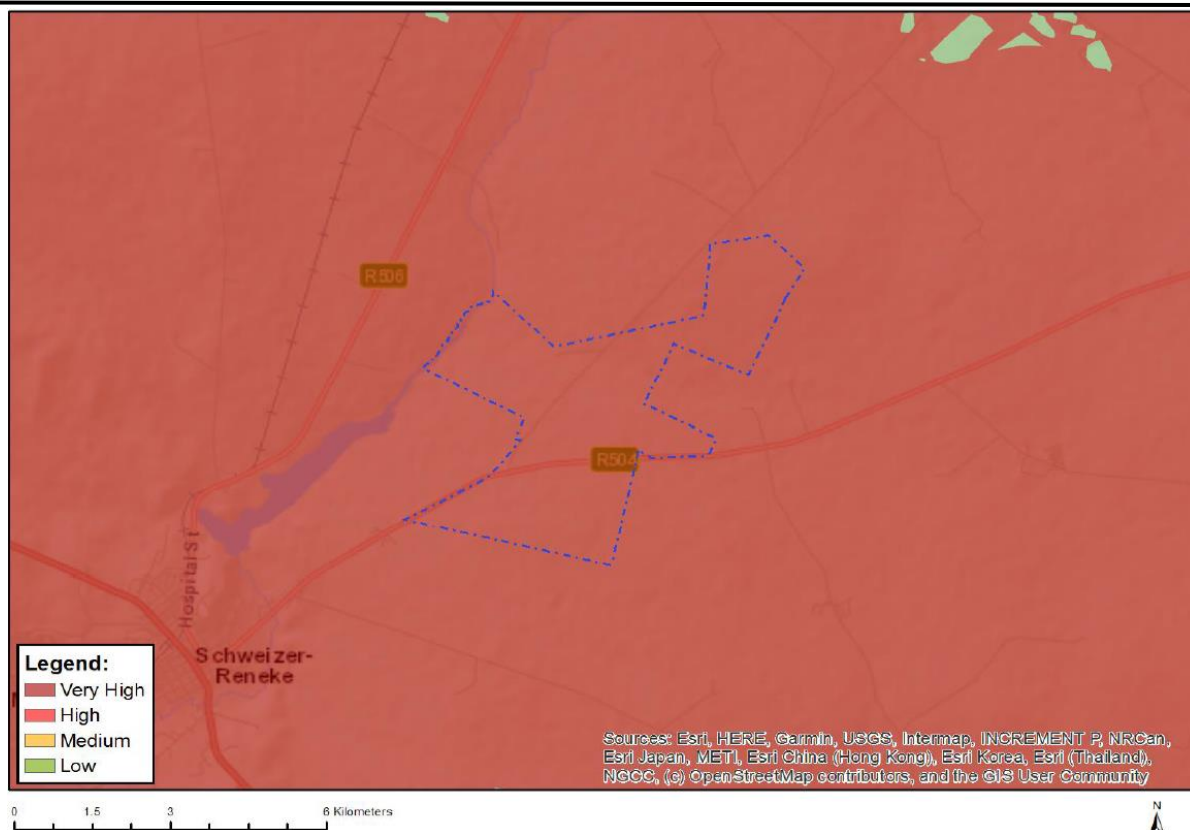
### **CRITICAL BIODIVERSITY AREAS**

Critical Biodiversity Areas (CBAs) are terrestrial and aquatic areas of high biodiversity value that need to be conserved and maintained in a natural or near-natural state to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services (MTPA, 2014). According to the National Environmental Management Act (NEMA) (Act no. 107 of 1998) certain activities have strict guidelines or are prohibited within CBAs and ESAs. Refer to the listed activities under the NEMA: Environmental Impact Assessment Regulations of 2014 (GNR 982) as promulgated in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) [as amended] for a comprehensive breakdown. The following terms are used to categorise the various land used types according to their biodiversity and environmental importance:

- Critical Biodiversity Area One (CBA1);
- Critical Biodiversity Area Two (CBA2);
- Ecological Support Area (ESA);
- Other Natural Areas (ONA); and
- Protected Area (PA).







**Figure 11:** Terrestrial Biodiversity Theme Sensitivity

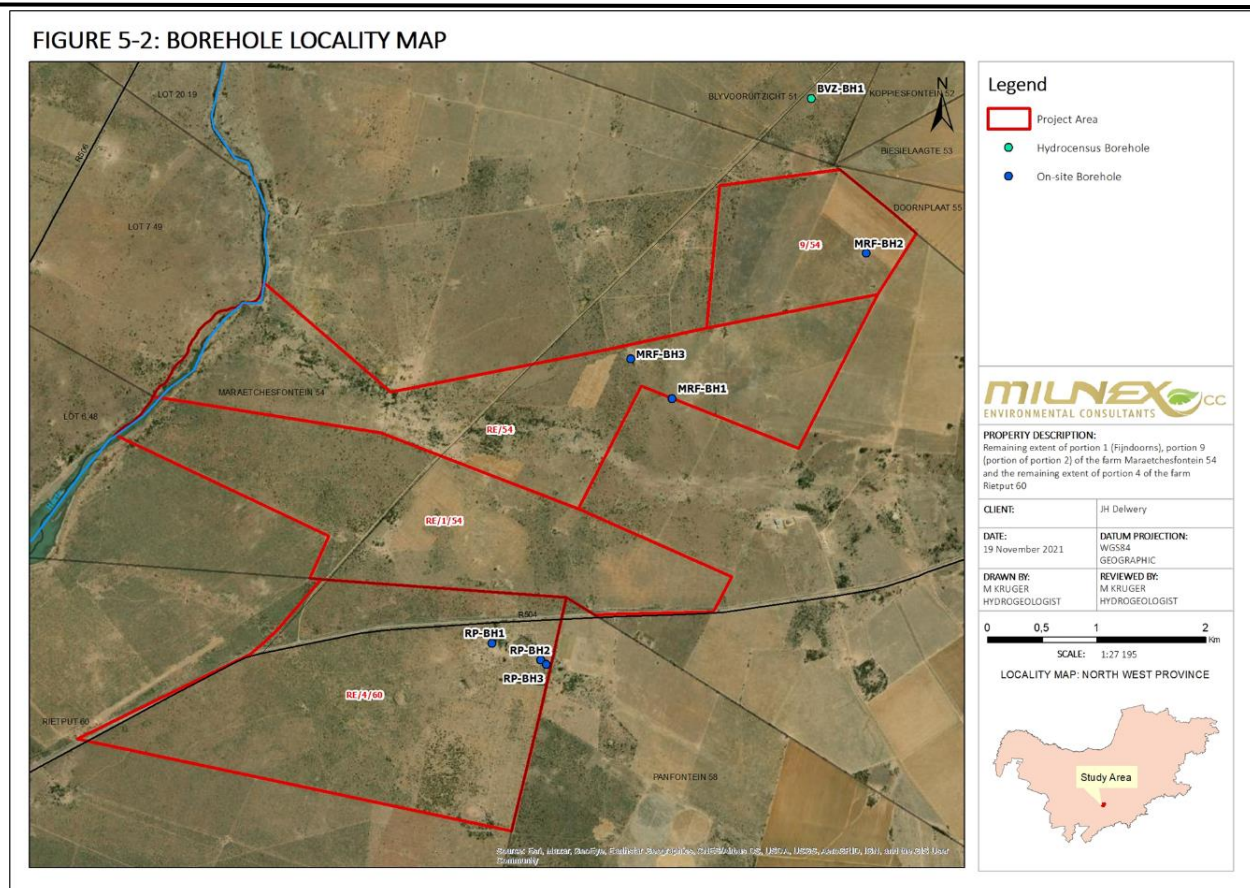
### **Groundwater Levels**

According to the Hydrogeological Investigation report, Six (6) boreholes (MRF-BH1 – BH3 and RP-BH1 – BH3) were located on the project site, of which MRF-BH1 is proposed to be used for mining operations. No access to boreholes on portion 1 of the Farm Maraetchesfontein 54 could be obtained, due to representative denying access.

One (1) hydrocensus borehole, BVZ-BH1 were located north of the project site on portion 2 of the Farm Blyvooruitzicht 51. The static groundwater levels ranged between 13.15 and 14.7mbgl. Groundwater in the area was mainly used for stock watering purposes. RP-BH3 was also used for domestic purposes. RP-BH2 was not in use during the field investigation.

Refer to **Figure 12** below for the locality of the boreholes.





**Figure 12:** Borehole locality map sourced from the Hydrogeological Investigation report

### **Description of the socio-economic environment**

- Socio-economic conditions

### **Geography, History & Economy**

Mamusa Local Municipality is part of Dr Ruth Segomotsi Mompati District Municipality.

**MDB code:** NW393

**Description:** The Mamusa Local Municipality is a Category B municipality situated within the Dr Ruth Segomotsi Mompati District Municipality in the North West Province. It is bordered by the Ngaka Modiri Molema District in the north, Greater Taung and Lekwa-Teemane in the south, the Dr Kenneth Kaunda District in the east, and Naledi in the west.

It is the smallest of the five municipalities that make up the district, accounting for 8% of its geographical area. The seat of the municipality is Schweizer-Reneke.

**Area:** 3 614km<sup>2</sup>

**Cities/Towns:** Amalia, Schweizer-Reneke

**Main Economic Sectors:** Agriculture, alluvial mining

## **CULTURAL AND HERITAGE ASPECTS**

Cultural Heritage in South Africa (includes all heritage resources) is protected by the **National Heritage Resources Act (Act 25 of 1999) (NHRA)**. According to Section 3 of the Act, all Heritage resources include “**all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens**”.

If such resources are found during the mining or development activities, they shall not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA must be contacted immediately and work must stop.

If anything of Archaeological and/or paleontological significance is found during the construction and operational phase of the mine the following applies:

- NHRA 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- NHRA 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- NHRA 38(4)e – The following conditions apply with regards to the appointment of specialists: i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;

If fossil remains or trace fossils are discovered during any phase of construction, either on the surface or exposed by excavations the **Chance Find Protocol** must be implemented by the Environmental Control Officer (ECO) in charge of these developments. These discoveries ought to be protected and the ECO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: [www.sahra.org.za](http://www.sahra.org.za)) so that mitigation can be carry out by a paleontologist.

### **Chance Find Procedure**

- If a chance find is made the person responsible for the find must immediately stop working and all work that could impact that finding must cease in the immediate vicinity of the find.
- The person who made the find must immediately report the find to his/her direct supervisor which in turn must report the find to his/her manager and the ESO or site manager. The ESO or site manager must report the find to the relevant Heritage Agency (South African Heritage Research Agency, SAHRA). (Contact details: SAHRA, 111

Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: [www.sahra.org.za](http://www.sahra.org.za)). The information to the Heritage Agency must include photographs of the find, from various angles, as well as the GPS co-ordinates.

- A preliminary report must be submitted to the Heritage Agency within 24 hours of the find and must include the following: 1) date of the find; 2) a description of the discovery and a 3) description of the fossil and its context (depth and position of the fossil), GPS co-ordinates.
- Photographs (the more the better) of the discovery must be of high quality, in focus, accompanied by a scale. It is also important to have photographs of the vertical section (side) where the fossil was found.

Upon receipt of the preliminary report, the Heritage Agency will inform the ESO (or site manager) whether a rescue excavation or rescue collection by a palaeontologist is necessary.

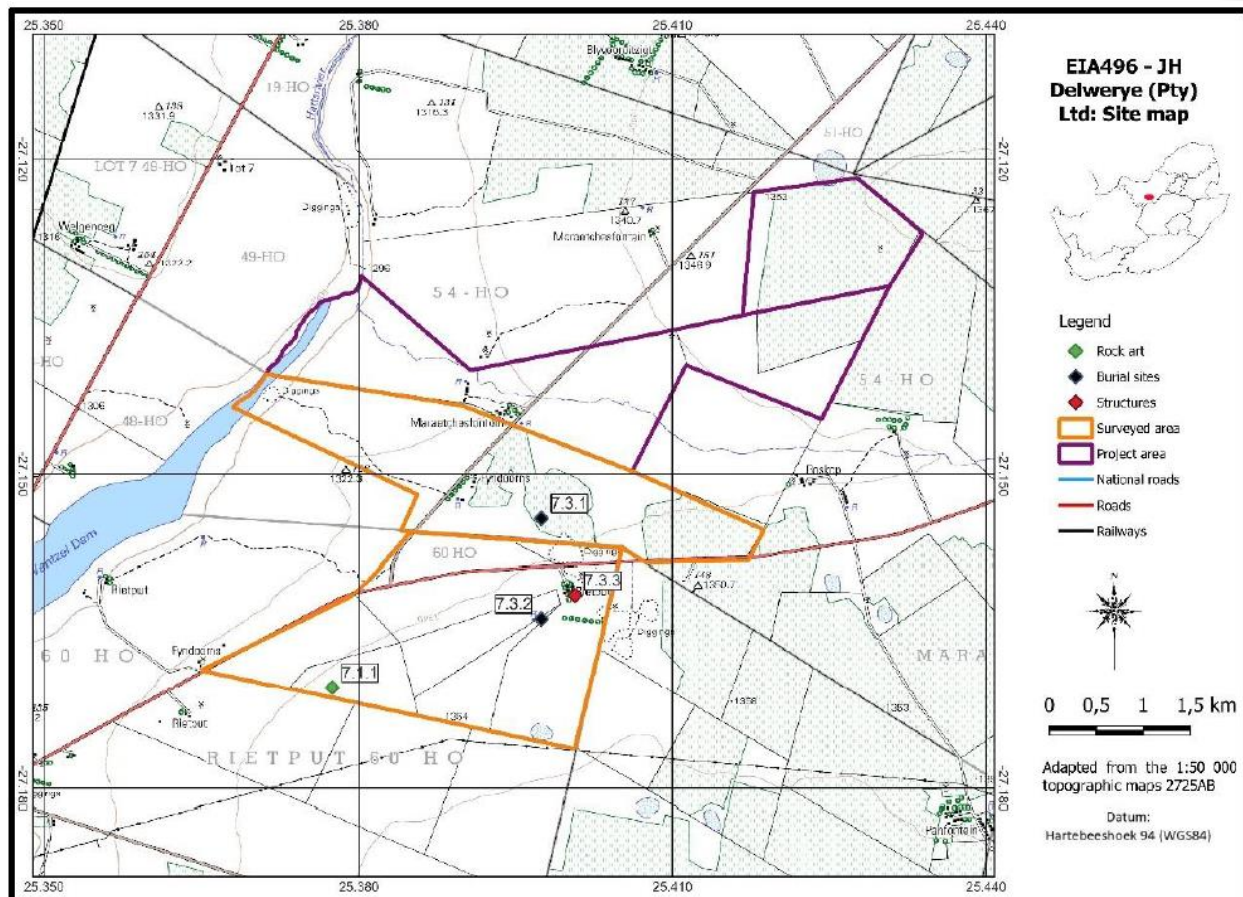
- The site must be secured to protect it from any further damage. No attempt should be made to remove material from their environment. The exposed finds must be stabilized and covered by a plastic sheet or sand bags. The Heritage agency will also be able to advise on the most suitable method of protection of the find.
- In the event that the fossil cannot be stabilized the fossil may be collected with extreme care by the ESO (site manager). Fossils finds must be stored in tissue paper and in an appropriate box while due care must be taken to remove all fossil material from the rescue site.
- Once Heritage Agency has issued the written authorization, the developer may continue with the development on the affected area.

### **Phase I Heritage Impact Assessment findings**

**NB:** As access could not be obtained for two sections of the application area, Remaining Extent and Portion 9 (Portion of Portion 2) of the farm Maraetchesfontein 54, they were not included in the field survey as well as the resultant report.

The below findings were recorded on site by J A van Schalkwyk





**Figure 13:** Location of heritage sites and features in the project area

### **Identified sites**

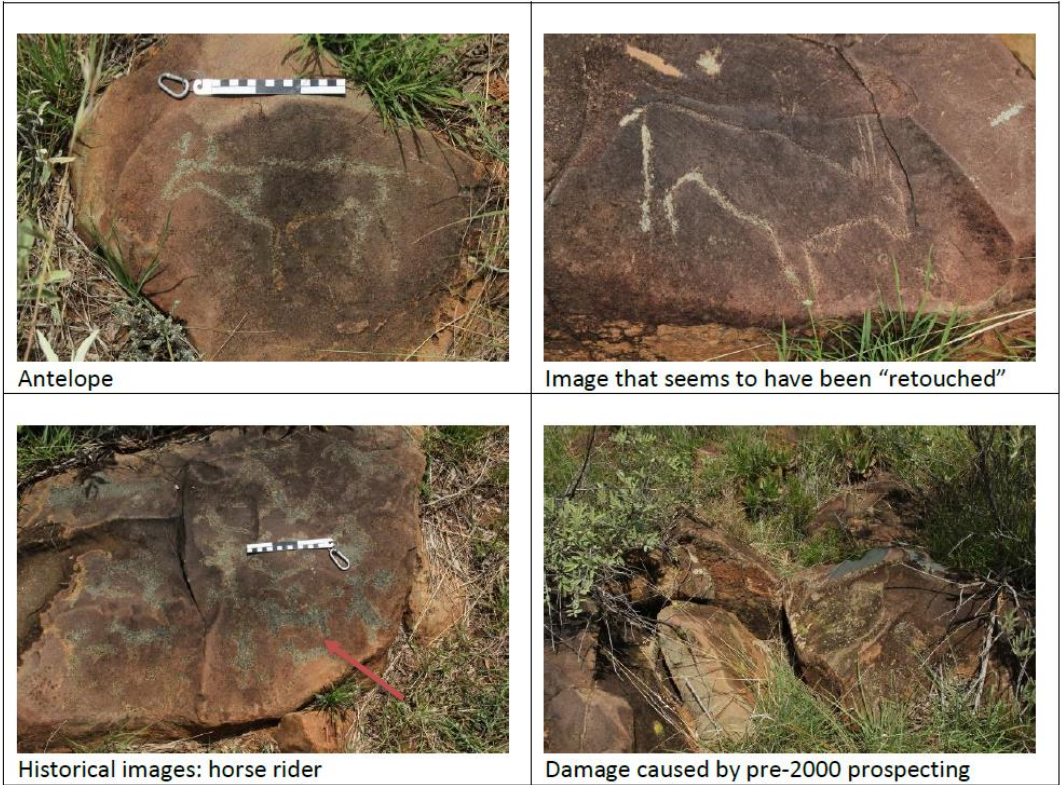
During the survey the following sites, features or objects of cultural significance were identified.

- **7.3.1 Rock engraving site:** A significant number of rock engravings, most of which can possibly be attributed to the San. Different styles can be identified: line drawings, pecked drawings and a combination of the techniques. Some recent graffiti, mostly initials of a number of individuals, were scratched on some of the rocks. The site is located on an outcrop of Ventersdorp lava, covering a distance of approximately 500m in length.
- **7.3.1 Burial site:** Two graves. One is a stone cairn with the name Nonnie Swart on a simple wood cross. The second is that of a young boy, M Bothma, born November 1950 and died March 1952.
- **7.3.2 Burial site:** Approximately 20 graves marked only with stone cairns. No names and dates are visible or known to the landowner. No descendants have visited the graves in the past number of years.

**7.3.3 Cattle kraal:** Well-constructed cattle kraal built with local stone. It is currently still in use and is well looked after.

**Type: Stone Age Farm: Rietput 60**





**Burial site. Farm: Maraetchesfontein 54**



**Views of the burial site**



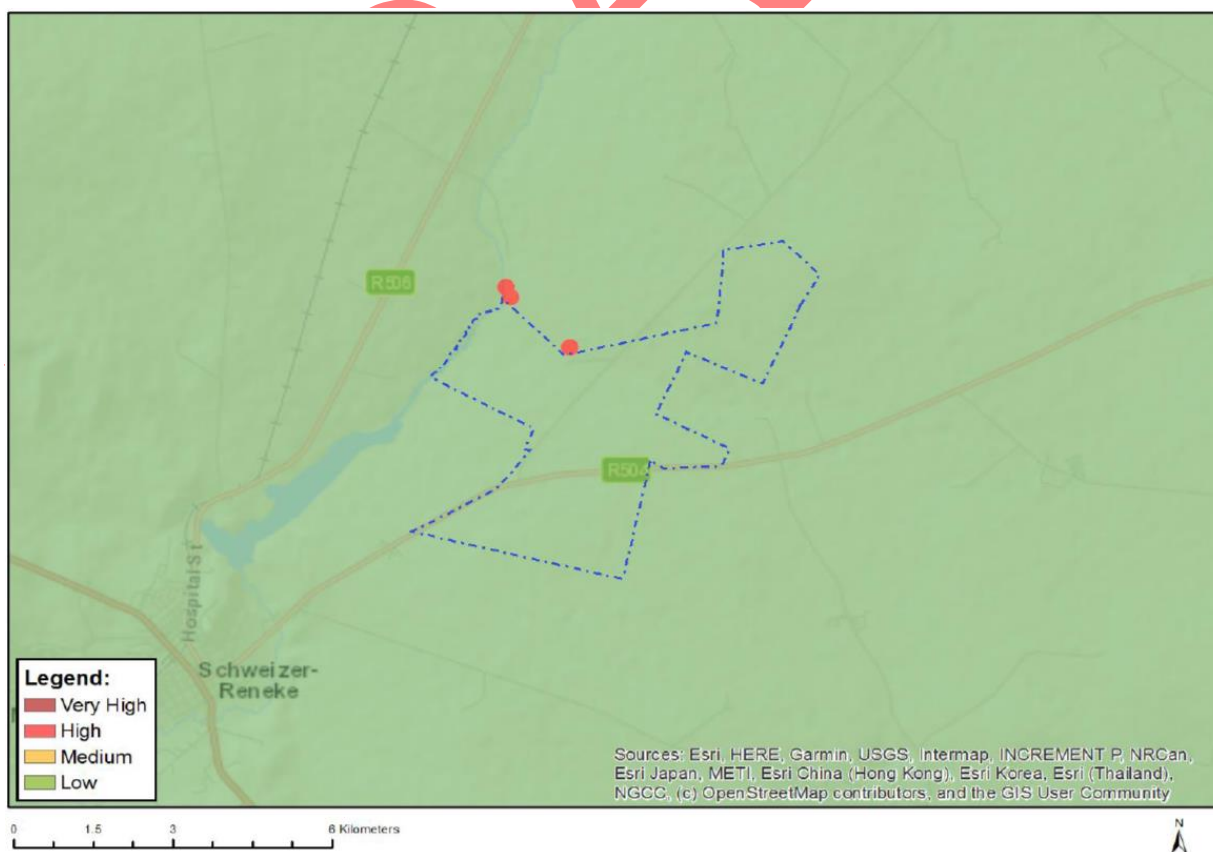
**View of the possible burial site**

## Cattle kraal Farm: Rietput 60



### Screening tool Results for Cultural and heritage aspects & Paleontology Theme Sensitivity

The area falls within low Cultural and heritage aspects, however within a medium Paleontology Theme Sensitivity. Kindly refer to figure 14 and Figure 15 below



**Figure 14:** Cultural and heritage aspects



## **PALAEONTOLOGICAL DESKTOP ASSESSMENT**

The following are findings and recommendations from the Palaeontological Desktop Assessment conducted.

### **Summary of Impacts**

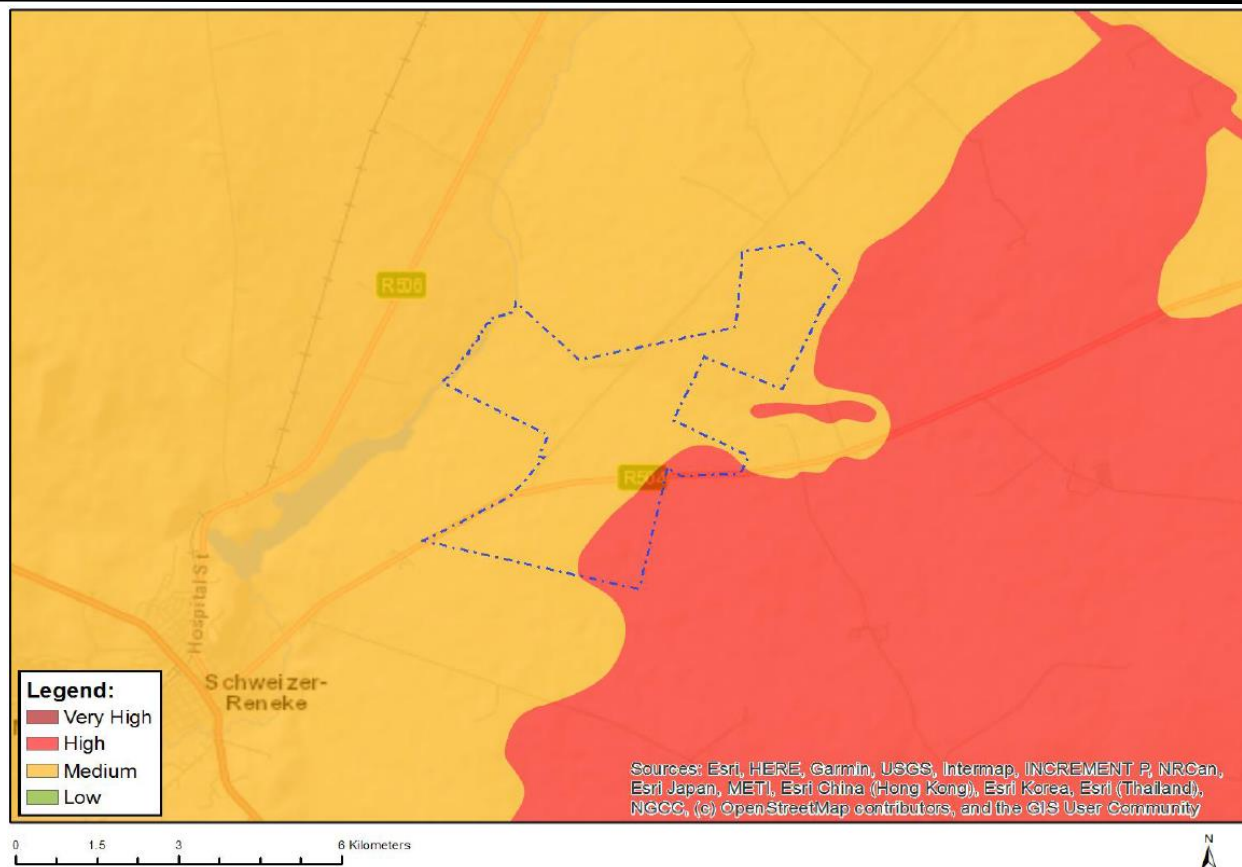
*Only the site will be affected (1). It is unlikely that the impact will occur (1). The expected duration of the impact is assessed as potentially permanent to long term (4). The impact on fossil heritage will be irreversible and a complete loss of fossil heritage will take place (4). The cumulative effect of the impact will be low (2). The magnitude of the impact happening will be low (1).*

*The Impact significance will therefore be a negative low Impact*

### **Findings and recommendations**

*The proposed development is mostly underlain by the Allanridge Formation (Platberg Group, Ventersdorp Supergroup), while a small portion of Quaternary alluvium is present along the riverbed. Sediments of the Eccra Group also underlie the south-eastern margin of the development. According to the South African Heritage Resources Information System, the Palaeontological Sensitivity of the Allanridge Formation is Low, Quaternary alluvium is Low but locally High while that of the Eccra Group is High. In this development diamond Prospecting is limited to the Allanridge Formation (Platberg Group, Ventersdorp Supergroup) and Quaternary alluvium along the riverbed. For this reason, a Low Palaeontological Sensitivity has been allocated to the proposed development. It is therefore considered that the proposed mining will not lead to detrimental impacts on the palaeontological heritage of the area.*

*If fossil remains are discovered during any phase of construction, either on the surface or exposed by excavations the Chance Find Protocol must be implemented by the Environmental Control Officer (ECO) in charge of these developments. These discoveries ought to be protected (if possible, in situ) and the ECO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: [www.sahra.org.za](http://www.sahra.org.za)) so that correct mitigation (recording and collection) can be carry out by a paleontologist.*



**Figure 15: Paleontology Theme Sensitivity**

**(b) Description of the current land uses.**

Below is the land cover of the farm which depicts that the area is dominated by natural land with agricultural fields





duration of the impact and the overall probability of occurrence. Significance is calculated as shown in the Table below.

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

### **Impact Rating System**

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

- Construction
- Operation
- Decommissioning

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

**Table: The rating system**

<b>NATURE</b>		
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.		
<b>GEOGRAPHICAL EXTENT</b>		
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.
<b>PROBABILITY</b>		
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).
<b>DURATION</b>		
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.
<b>INTENSITY/ MAGNITUDE</b>		
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.
<b>REVERSIBILITY</b>		
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.
<b>IRREPLACEABLE LOSS OF RESOURCES</b>		
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.
<b>CUMULATIVE EFFECT</b>		
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
<b>SIGNIFICANCE</b>		
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.

- vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;**

- Increased ambient noise levels resulting from geophysics 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 within 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.
- Access control to portion which may impact on cattle movement, breeding and grazing practices of the surrounding community.
- 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.
- Negative impacts on the groundwater resources.
- Longterm loss of indigenous vegetation.
- Air pollution due to dust to the surrounding community and hospital.
- Impact on tourism.

**viii) the possible mitigation measures that could be applied and level of residual 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).

Adverse environmental associated with the prospecting activity have been identified through the Scoping & EIR process. Mitigation measures as set out in the Environmental Management Programme (EMPr) attached in Part B must be implemented in order to minimise any potential impacts.

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

**ix) if no alternative development [location] footprints for the activity were investigated, the motivation for not considering such; and**

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, it is expected that high volumes of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite (DK) including associated infrastructure, structure and earthworks on the remaining extent, remaining extent of portion 1 (fijndoorns), portion 9 (portion of portion 2) of the farm Maraetchesfontein 54 and remaining extent of portion 4 of the farm Rietput 60, Registration Division: HO, North West Province.

**x) a concluding statement indicating the location of the preferred alternative development [location] footprint within the approved site as contemplated in the accepted scoping report;**

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

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

# **I. A FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS THE ACTIVITY AND ASSOCIATED STRUCTURES AND INFRASTRUCTURE WILL IMPOSE ON THE PREFERRED [LOCATION] DEVELOPMENT FOOTPRINT ON THE APPROVED SITE**

(AS CONTEMPLATED IN THE ACCEPTED SCOPING REPORT THROUGH THE LIFE OF THE ACTIVITY, INCLUDING—.)

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

### **Process for the identification of key issues**

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

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

### **Checklist analysis**

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

**Table:** Environmental checklist

QUESTION	YES	NO	Un-sure	Description
<b>1. Are any of the following located on the site earmarked for the development?</b>				
I. A river, stream, dam or wetland	X			The farm borders the Wentzel dam
II. A conservation or open space area			X	
III. An area that is of cultural importance			X	
IV. Site of geological significance		X		
V. Areas of outstanding natural beauty	X			Land capability 4
VI. Highly productive agricultural land			X	None
VII. Floodplain		X		None

VIII. Indigenous forest			X	
IX. Grass land			X	
X. Bird nesting sites	X			Due to site being adjacent the Wentzel dam, birds nests are expect/may be found on site.
XI. Red data species			X	
XII. Tourist resort			X	
<b>2. Will the project potentially result in potential?</b>				
I. Removal of people		X		None.
II. Visual Impacts	X			The visual impact will be managed; however it may be difficult since the site is situated next to the road
III. Noise pollution		X		The noise impact is unlikely to be significant.
IV. Construction of an access road		X		None. Access will be obtained from gravel road off the R504
V. Risk to human or valuable ecosystems due to explosion/fire/ discharge of waste into water or air.		X		None.
VI. Accumulation of large workforce (>50 manual workers) into the site.		X		Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
VII. Utilisation of significant volumes of local raw materials such as water, wood etc.	X			The application area will use 2 x 16 feet washing pans will be used, the amount of water for the pans will be 34 000 L/hour from which 30% is re-used.
VIII. Job creation	X			Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
IX. Traffic generation		X		None.
X. Soil erosion		X		Only areas earmarked for mining will be cleared. Mining 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		X		None.
<b>3. Is the proposed project located near the following?</b>				
I. A river, stream, dam or wetland	X			Wentzel Dam
II. A conservation or open space area			X	
III. An area that is of cultural importance			X	
IV. A site of geological significance			X	
V. An area of outstanding natural beauty	X			Yes
VI. Highly productive agricultural land		X		
VII. A tourist resort		X		
VIII. A formal or informal settlement			X	

### Matrix analysis

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

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

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

ii) An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;

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	Durati on	Possible Mitigation		
CONSTRUCTION PHASE									
<p><b>Listing Notice GNR 325, Activity 15:</b> "The clearance of an area of 20 hectares or more, of indigenous vegetation."</p> <p><b>Listing Notice GNR 325, Activity 19:</b> "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002),</p> <p><b>Listing Notice GNR 325, Activity 20:</b> "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),</p>	<u>Site clearing and preparation</u> Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"><li>Loss or fragmentation of indigenous natural vegetation.</li><li>Loss of sensitive species.</li><li>Loss or fragmentation of habitats.</li></ul>		-	L	Yes	-
			Air	<ul style="list-style-type: none"><li>Air pollution due to the increase of traffic of construction vehicles.</li></ul>	-		M	Yes	-
			Soil	<ul style="list-style-type: none"><li>Soil degradation, including erosion.</li><li>Loss of topsoil.</li><li>Disturbance of soils and existing land use (soil compaction).</li></ul>		-	S	Yes	-
			Geology	<ul style="list-style-type: none"><li>It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.</li></ul>		-	S	Yes	-
			Existing services infrastructure	<ul style="list-style-type: none"><li>Generation of waste that need to be accommodated at a licensed landfill site.</li><li>Generation of sewage that need to be accommodated by the local sewage plant.</li></ul>		-	S	Yes	-
			Ground water	<ul style="list-style-type: none"><li>Pollution due to construction vehicles.</li></ul>	-		S	Yes	-
			Surface water	<ul style="list-style-type: none"><li>Increase in storm water run-off.</li><li>Pollution of water sources due to soil erosion.</li><li>Destruction of watercourses (pans/dams/streams).</li></ul>		-	S	Yes	-
	SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"><li>Job creation.</li><li>Business opportunities.</li><li>Skills development.</li></ul>		+	S	Yes	-	
		Visual landscape	<ul style="list-style-type: none"><li>Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility.</li></ul>	-		L	Yes	-	
		Traffic volumes	<ul style="list-style-type: none"><li>Increase in construction vehicles.</li></ul>	-		S	Yes	-	
		Health & Safety	<ul style="list-style-type: none"><li>Air/dust pollution.</li><li>Road safety.</li><li>Increased risk of veld fires.</li></ul>		-	S	Yes	-	
		Noise levels	<ul style="list-style-type: none"><li>The generation of noise as a result of construction vehicles, the use of machinery such as drills, excavators, rotary pans, dumper trucks and people working on the site.</li></ul>	-		L	Yes	-	
		Tourism industry	<ul style="list-style-type: none"><li>Since there are no tourism facilities in close proximity to the site, the construction activities will not have an impact on tourism in the area.</li></ul>	N/A	N/A	N/A	Yes	-	



			Heritage resources	<ul style="list-style-type: none"> <li>Removal or destruction of archaeological and/or paleontological sites.</li> <li>Removal or destruction of buildings, structures, places and equipment of cultural significance.</li> <li>Removal or destruction of graves, cemeteries and burial grounds.</li> </ul>	-		S	Yes	-
<b>OPERATIONAL PHASE</b>									
<b>Listing Notice GNR 325, Activity 19:</b> “The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource [;]; or (b) [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 primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.	The key components of the proposed project are described below: <ul style="list-style-type: none"> <li><u>Supporting Infrastructure</u> - A control facility with basic services such as water and electricity will be constructed on the site and will have an approximate footprint 50m<sup>2</sup> or less. Other supporting infrastructure includes a site office and workshop area.</li> <li><u>Roads</u> – Access will be obtained from gravel road off the R504</li> <li><u>Fencing</u> - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm.</li> </ul>	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> <li>Fragmentation of habitats.</li> <li>Establishment and spread of declared weeds and alien invader plants (operations).</li> </ul>		-	L	Yes	-
			Air quality	<ul style="list-style-type: none"> <li>Air pollution due to the mining activity, crusher plant and transport of the gravel to the designated areas.</li> </ul>	-		S	Yes	-
			Soil	<ul style="list-style-type: none"> <li>Soil degradation, including erosion.</li> <li>Disturbance of soils and existing land use (soil compaction).</li> <li>Loss of agricultural potential (low significance relative to agricultural potential of the site).</li> </ul>		-	L	Yes	-
			Geology	<ul style="list-style-type: none"> <li>Collapsible soil.</li> <li>Seepage (shallow water table).</li> <li>Active soil (high soil heave).</li> <li>Erodible soil.</li> <li>The presence of undermined ground.</li> <li>Instability due to soluble rock.</li> <li>Steep slopes or areas of unstable natural slopes.</li> <li>Areas subject to seismic activity.</li> <li>Areas subject to flooding.</li> </ul>		-	L	Yes	-
			Existing services infrastructure	<ul style="list-style-type: none"> <li>Generation of waste that need to be accommodated at a licensed landfill site.</li> <li>Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant.</li> <li>Increased consumption of water. Approximately 34 000 L/hour</li> </ul>		-	L	Yes	-
			Ground water	<ul style="list-style-type: none"> <li>Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.</li> </ul>		-	L	Yes	-
			Surface water	<ul style="list-style-type: none"> <li>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.</li> <li>Destruction of watercourses (pans/dams/streams).</li> <li>Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.</li> </ul>	-		L	Yes	-
		SOCIAL/ECO	Local unemployment rate	<ul style="list-style-type: none"> <li>Job creation. Security guards will be required for 24 hours every day of the week.</li> <li>Skills development.</li> </ul>		+	L	Yes	-

			Visual landscape	<ul style="list-style-type: none"><li>The proposed portions are used for livestock grazing which will still take place simultaneously with the prospecting activity, however this depends on the location of the activity.</li></ul>		-	L	Yes	-
			Traffic volumes	<ul style="list-style-type: none"><li>Increase in vehicles collecting gravel for distribution.</li></ul>	-		S	Yes	-
			Health & Safety	<ul style="list-style-type: none"><li>Air/dust pollution.</li><li>Road safety.</li></ul>		-	S	Yes	-
			Noise levels	<ul style="list-style-type: none"><li>The proposed development will result in noise pollution during the operational phase.</li></ul>	-	-	L	Yes	-
			Tourism industry	<ul style="list-style-type: none"><li>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.</li></ul>	N/A	N/A	N/A	N/A	-
			Heritage resources	<ul style="list-style-type: none"><li>It is not foreseen that the proposed activity will impact on heritage resources or vice versa .</li></ul>	N/A	N/A	N/A	N/A	-
DECOMMISSIONING PHASE									
-	<u>Mine closure</u> During the mine closure the Mine and its associated infrastructure will be dismantled.  <u>Rehabilitation of biophysical environment</u> The biophysical environment will be rehabilitated.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"><li>Re-vegetation of exposed soil surfaces to ensure no erosion in these areas.</li></ul>	+		L	Yes	-
			Air quality	<ul style="list-style-type: none"><li>Air pollution due to the increase of traffic of construction vehicles.</li></ul>	-		S	Yes	-
			Soil	<ul style="list-style-type: none"><li>Backfilling of all voids</li><li>Placing of topsoil on backfill</li></ul>	+		L	Yes	-
			Geology	<ul style="list-style-type: none"><li>It is not foreseen that the decommissioning phase will impact on the geology of the site or vice versa.</li></ul>	N/A	N/A	N/A	N/A	-
			Existing services infrastructure	<ul style="list-style-type: none"><li>Generation of waste that need to be accommodated at the local landfill site.</li><li>Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant.</li><li>Increase in construction vehicles.</li></ul>	-		S	Yes	-
			Ground water	<ul style="list-style-type: none"><li>Pollution due to construction vehicles.</li></ul>	-		S	Yes	-
			Surface water	<ul style="list-style-type: none"><li>Increase in storm water run-off.</li><li>Pollution of water sources due to soil erosion.</li><li>Destruction of watercourses (pans/dams/streams).</li></ul>	-		S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"><li>Loss of employment.</li></ul>		-	L	Yes	-
			Visual landscape	<ul style="list-style-type: none"><li>Potential visual impact on visual receptors in close proximity to proposed facility.</li></ul>	-		S	Yes	-
			Traffic volumes	<ul style="list-style-type: none"><li>Increase in construction vehicles.</li></ul>	-		S	Yes	-
			Health & Safety	<ul style="list-style-type: none"><li>Air/dust pollution.</li><li>Road safety.</li><li>Increased crime levels. The presence of mine workers on the site may increase</li></ul>			L	Yes	-

				security risks associated with an increase in crime levels as a result of influx of people in the rural area.					
			Noise levels	<ul style="list-style-type: none"><li>The generation of noise as a result of construction vehicles, the use of machinery and people working on the site.</li></ul>	-		S	Yes	-
			Tourism industry	<ul style="list-style-type: none"><li>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.</li></ul>	N/A	N/A	N/A	N/A	-
			Heritage resources	<ul style="list-style-type: none"><li>It is not foreseen that the decommissioning phase will impact on any heritage resources.</li></ul>	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

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## J. AN ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK, INCLUDING—

- (i) cumulative impacts;
- (ii) the nature, significance and consequences of the impact and risk;
- (iii) the extent and duration of the impact and risk;
- (iv) the probability of the impact and risk occurring;
- (v) the degree to which the impact and risk can be reversed;
- (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and
- (vii) the degree to which the impact and risk can be mitigated;

### **Significance of potential impacts**

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

### **INITIAL CLEARANCE AND SITE PREPARATION PHASE**

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

#### **Impacts on the Ecological aspects:**

According to the desktop Watercourse Delineation and Ecological Impact Assessment Report, the prospecting activities will result in a disturbance of the wetland system and terrestrial habitats during the construction, operational and decommissioning phases. During rainfall events, the wetlands may receive an influx of sediment and other nutrients and possible toxic pollutants. See **Table** below for a list of expected impacts.

**Table:** Summary of potential impacts

<b>Construction Phase</b>	<b>Operational Phase</b>	<b>Decommissioning Phase</b>
Alteration of the flow regime of the watercourse	Alteration of the flow regime of the watercourse	Alteration of the flow regime of the watercourse
Loss and disturbance of watercourse habitat and fringe vegetation	Loss and disturbance of watercourse habitat and fringe vegetation	Loss of terrestrial habitat
Alteration of the amount of sediment entering the water resource and associated change in turbidity	Alteration of the amount of sediment entering the water resource and associated change in turbidity	Changing the physical structure within a water resource (habitat)
Alteration of water quality	Alteration of water quality	Introduction and spread of alien vegetation
Loss of terrestrial habitat	Loss of terrestrial habitat	
Loss of Aquatic Biota	Loss of Aquatic Biota	
Loss of Terrestrial Fauna	Loss of Terrestrial Fauna	
Loss of Terrestrial Flora	Loss of Terrestrial Flora	
Introduction and spread of alien vegetation	Introduction and spread of alien vegetation	

Potential Environmental Impact	Environmental Impact Before Mitigation					Significance	Environmental Impact After Mitigation					Significance
	Frequency of Impact	Frequency of Activity	Severity	Spatial Scale	Duration		Frequency of Impact	Frequency of Activity	Severity	Spatial Scale	Duration	
Alteration of the flow regime of the watercourse	5	4	3	3	4	90 Medium - High	3	4	2	3	3	56 Medium - Low
Changing the physical structure within a water resource (habitat)	4	4	3	3	4	80 Medium - High	2	4	2	2	3	42 Low
Alteration of the amount of sediment entering the water resource and associated change in turbidity	4	4	3	4	3	80 Medium - High	3	4	2	3	2	49 Low
Alteration of water quality	4	4	3	4	3	80 Medium - High	3	4	1	3	2	42 Low
Loss of terrestrial habitat	5	4	3	3	3	81 Medium - High	3	4	2	2	2	42 Low
Loss of Aquatic Biota	3	3	3	4	3	60 Medium - Low	3	3	2	2	1	30 Low
Loss of Terrestrial Fauna	5	4	3	3	3	81 Medium - High	2	3	1	1	1	15 Very Low
Loss of Terrestrial Flora	4	4	3	3	3	72 Medium - Low	3	4	2	1	1	28 Low
Introduction and spread of alien vegetation	4	3	3	3	4	70 Medium - Low	3	3	2	2	2	36 Low



## Operational Phase Impact Assessment

Potential Environmental Impact	Environmental Impact Before Mitigation					Significance	Environmental Impact After Mitigation					Significance
	Frequency of Impact	Frequency of Activity	Severity	Spatial Scale	Duration		Frequency of Impact	Frequency of Activity	Severity	Spatial Scale	Duration	
Alteration of the flow regime of the watercourse	5	4	4	4	5	117 High	4	4	3	3	4	80 Medium – High
Changing the physical structure within a water resource (habitat)	5	4	4	4	5	117 High	4	4	3	3	3	72 Medium – Low
Alteration of the amount of sediment entering the water resource and associated change in turbidity	5	4	4	4	4	108 High	4	4	2	3	2	56 Medium – Low
Alteration of water quality	5	4	4	4	4	108 High	4	4	2	3	2	56 Medium – Low
Loss of terrestrial habitat	5	4	3	3	4	90 Medium – High	4	4	2	2	4	64 Medium – Low
Loss of Aquatic Biota	4	3	3	4	4	70 Medium – Low	3	3	2	2	4	48 Low
Loss of Terrestrial Fauna	4	3	3	3	4	70 Medium – Low	3	3	2	2	3	42 Low
Loss of Terrestrial Flora	5	4	3	3	4	90 Medium – High	4	4	2	2	3	56 Medium – Low
Introduction and spread of alien vegetation	4	3	3	3	5	77 Medium – High	2	3	2	1	3	30 Low

**Table:** Proposed management measures relevant to the proposed mining operations

Impact	Source of Impact	Recommended Mitigation Measures
<b>Alteration of the flow regime of the watercourse</b>	<p><b>Construction:</b></p> <ul style="list-style-type: none"> <li>Infrastructure development within watercourses</li> <li>Removal and disturbance of watercourse habitat and vegetation</li> <li>Habitat fragmentation</li> <li>Impoundments within the watercourse</li> <li>Lack of adequate rehabilitation resulting in colonization by invasive plants</li> </ul> <p><b>Operational:</b></p> <ul style="list-style-type: none"> <li>Excavation from the watercourses</li> <li>Clearing of vegetation</li> <li>Vehicles driving in and through watercourses</li> <li>Stockpiling</li> </ul> <p><b>Decommissioning:</b></p> <ul style="list-style-type: none"> <li>Damage to vegetated areas</li> <li>Ineffective rehabilitation measures</li> <li>Vehicles driving in and through watercourses</li> </ul>	<ul style="list-style-type: none"> <li>Any activities that take place within 48 meters of a wetland or watercourse or the 1:100 year flood lines will require authorisation in terms of the relevant regulations of NEMA, however as far as possible infrastructure should be placed outside of 48m buffer lines.</li> <li>Demarcate the watercourse areas and buffer zones to limit disturbance, clearly mark these areas as no-go areas.</li> <li>Where construction occurs in the demarcated watercourse and buffer areas, additional precautions should be implemented to minimise watercourse loss.</li> <li>No stockpiling should take place within a watercourse or the calculated buffers.</li> <li>All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.</li> <li>Erosion and sedimentation into channels must be minimised through the effective stabilisation and the re-vegetation of any disturbed stream banks.</li> <li>Ensure that erosion management and sediment controls are strictly implemented from the beginning of site clearing activities.</li> <li>All areas should be re-sloped and top-soiled where necessary and reseeded with indigenous grasses to stabilise the loose material.</li> <li>Monitor the occurrence of erosion during the rainy season and take immediate corrective action where needed.</li> <li>A sensitivity map has been developed for the study area, indicating the wetland systems, and their relevant buffer zones. It is recommended that this sensitivity map be considered during all phases of the development and with special mentioning of the planning of infrastructure, in order to aid in the conservation of and</li> </ul>

		<p>minimise impact on the wetland and aquatic habitat and resources within the study site.</p> <ul style="list-style-type: none"> <li>Any areas where bank failure is observed, due to the mining impacts, should be immediately repaired.</li> <li>As far as possible the existing road network should be utilised, minimising the need to develop new access routes resulting in an increased impact on the local environment.</li> <li>Operational phase activities should not take place within watercourses or buffer zones.</li> <li>The duration of impacts on the wetlands should be minimised as far as possible by ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised.</li> <li>Alien and invasive vegetation control should take place throughout all phases to prevent loss of floral habitat.</li> <li>All rehabilitation activities should occur in the dry season.</li> <li>Rehabilitation of disturbed areas because of construction must be implemented immediately upon completion of construction where possible.</li> </ul>
<p><b>Changing the physical structure within a water resource (habitat)</b></p>	<p><b><u>Construction:</u></b></p> <ul style="list-style-type: none"> <li>Infrastructure development within watercourses</li> <li>Loss of vegetation</li> <li>Flow alteration</li> <li>Erosion</li> </ul> <p><b><u>Operational:</u></b></p>	<ul style="list-style-type: none"> <li>Other than approved and authorized structures, no other development or maintenance infrastructure is allowed within the delineated watercourse and riparian areas or their associated buffer zones.</li> <li>Alien and invasive vegetation control should take place throughout all phases to prevent loss of floral habitat.</li> <li>Monitor the occurrence of erosion during the rainy season and take immediate corrective action where needed.</li> </ul>

	<ul style="list-style-type: none"> <li>Excavation from the watercourses leading to degraded river channels.</li> <li>Removal of substrate within wetlands</li> <li>Clearing of vegetation – vegetation loss</li> <li>Loss of biodiversity</li> <li>Alteration and/or loss of hydrological flow classes</li> <li>Vehicles driving in and through watercourses</li> <li>Stockpiling</li> </ul> <p><b><u>Decommissioning:</u></b></p> <ul style="list-style-type: none"> <li>Damage to vegetated areas</li> <li>Ineffective rehabilitation measures</li> <li>Vehicles driving in and through watercourses</li> </ul>	<ul style="list-style-type: none"> <li>No stockpiling should take place within a watercourse or the calculated buffers.</li> <li>All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.</li> <li>All maintenance within watercourses must be restricted to the dry season.</li> <li>Maintenance activities should not impact on rehabilitated or naturally vegetated areas.</li> <li>The duration of impacts on the wetland systems should be minimised as far as possible by ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised.</li> <li>Rehabilitation must ensure that wetland structure and function are reinstated in such a way as to ensure the ongoing functionality of the systems at pre-mining levels.</li> <li>All rehabilitation activities should occur in the dry season.</li> </ul>
<p><b>Alteration of the amount of sediment entering the water resource and associated change in turbidity</b></p>	<p><b><u>Construction:</u></b></p> <ul style="list-style-type: none"> <li>Vegetation clearance causing sedimentation</li> <li>Earthworks activities</li> <li>Disturbance of soil surface and runoff characteristics</li> <li>Erosion</li> </ul>	<ul style="list-style-type: none"> <li>Buffer zones should be maintained, in order to minimise sedimentation of the downstream areas.</li> <li>No stockpiling should take place within a watercourse or the calculated buffers.</li> <li>Ensure that erosion management and sediment controls are strictly implemented from the beginning of site clearing activities.</li> <li>All areas should be re-sloped and top-soiled where necessary and reseeded with indigenous grasses to stabilise the loose material.</li> </ul>

	<p><b><u>Operational:</u></b></p> <ul style="list-style-type: none"> <li>• Excavation from the watercourses leading to degraded river channels.</li> <li>• Removal of substrate within wetlands</li> <li>• Clearing of vegetation – vegetation loss</li> <li>• Loss of biodiversity</li> <li>• Alteration and/or loss of hydrological flow classes</li> <li>• Vehicles driving in and through watercourses</li> <li>• Stockpiling</li> </ul> <p><b><u>Decommissioning:</u></b></p> <ul style="list-style-type: none"> <li>• Damage to vegetated areas</li> <li>• Ineffective rehabilitation measures</li> <li>• Vehicles driving in and through watercourses</li> </ul>	<ul style="list-style-type: none"> <li>• All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.</li> <li>• Erosion and sedimentation into channels must be minimised through the effective stabilisation and the re-vegetation of any disturbed stream banks.</li> <li>• As far as possible the existing road network should be utilised, minimising the need to develop new access routes resulting in an increased impact on the local environment.</li> <li>• Erosion control measures, such as berms, must be implemented to manage runoff from roads to prevent erosion and pollution.</li> <li>• Rehabilitation of disturbed areas as a result of construction must be implemented immediately upon completion of construction.</li> <li>• Rehabilitation must ensure that riparian structure and function are reinstated in such a way as to ensure the ongoing functionality of the larger riparian systems at pre-mining levels.</li> <li>• All rehabilitation activities should occur in the dry season.</li> <li>• The duration of impacts on the riverine systems should be minimised as far as possible by ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised.</li> <li>• Maintain flood capacity, particularly in areas with significant flood hazards.</li> </ul>
<b>Alteration of water quality</b>	<p><b><u>Construction:</u></b></p> <ul style="list-style-type: none"> <li>• Runoff from road surfaces</li> <li>• Discharge of sewage</li> <li>• Discharge of solvents, chemicals and hydrocarbons</li> </ul>	<ul style="list-style-type: none"> <li>• Re-fuelling must take place on a sealed surface area to prevent hydrocarbon pollution.</li> <li>• All spills should be cleaned up immediately and disposed of.</li> <li>• Spill kits should be readily available and easily accessible throughout the site.</li> </ul>



	<p><b><u>Operational:</u></b></p> <ul style="list-style-type: none"> <li>• Maintenance of vehicles and machinery</li> <li>• Runoff from operational areas</li> <li>• Discharge of sewage</li> <li>• Discharge of solvents, chemicals and hydrocarbons</li> <li>• Excavation from the watercourses and the release of nutrients and pollutants from disturbed soils</li> <li>• Removal of substrate within wetlands</li> <li>• Sedimentation from Stockpile runoff</li> </ul> <p><b><u>Decommissioning:</u></b></p> <ul style="list-style-type: none"> <li>• Damage to vegetated areas</li> <li>• Ineffective rehabilitation measures</li> <li>• Vehicles driving in and through watercourses</li> </ul>	<ul style="list-style-type: none"> <li>• All chemicals must be stored safely on site, outside the buffer areas and surrounded by bunds. Chemical storage containers must be regularly inspected for early leak detection.</li> <li>• Littering must be prevented by effective site management and the provision of bins.</li> <li>• Provision of adequate sanitation facilities located outside of the delineated buffer zones.</li> <li>• An emergency spill procedure should be developed and implemented.</li> <li>• No stockpiling should take place within a watercourse.</li> <li>• All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.</li> <li>• Stockpiles must be located away from channels, wetlands and drainage lines.</li> <li>• Erosion and sedimentation into channels must be minimised through the effective stabilisation and the re-vegetation of any disturbed riverbanks.</li> </ul>
<b>Loss of terrestrial habitat</b>	<p><b><u>Construction:</u></b></p> <ul style="list-style-type: none"> <li>• Clearing of vegetation – vegetation loss</li> </ul> <p><b><u>Operational:</u></b></p> <ul style="list-style-type: none"> <li>• Removal of substrate within watercourses</li> <li>• Clearing of vegetation during mining operations</li> </ul>	<ul style="list-style-type: none"> <li>• Areas that are stripped during construction and operation should be re-vegetated with indigenous vegetation.</li> <li>• It is recommended that areas to be developed be specifically demarcated so that during the construction phase, only the demarcated areas be impacted upon (including fencing off the defined project area) and preventing movement of workers into natural areas.</li> </ul>

	<ul style="list-style-type: none"> <li>• Stockpiling</li> </ul> <p><b><u>Decommissioning:</u></b></p> <ul style="list-style-type: none"> <li>• Damage to vegetated areas</li> <li>• Ineffective rehabilitation measures</li> <li>• Vehicles driving in and through watercourses</li> </ul>	<ul style="list-style-type: none"> <li>• The duration of the mining should be minimized to as short term as possible, in order to reduce the period of disturbance on fauna and flora.</li> <li>• Areas of indigenous vegetation should under no circumstances be fragmented or disturbed for used as an area for dumping of waste.</li> <li>• As far as possible the existing road network should be utilised, minimising the need to develop new access routes resulting in an increased impact on the local environment.</li> <li>• All staff and visitors to the site must undergo an induction process and must be made aware of the sensitive nature of the environment and floral species which occur there.</li> <li>• The area must be re-vegetated with plant and grass species which are endemic to the exact vegetation types.</li> <li>• Rehabilitation measures that are implemented must be continually monitored for a minimum period of four years to ensure that proper succession has occurred and that there is no erosion occurring.</li> <li>• An alien invasive vegetation management plan should be developed and implemented.</li> <li>• Alien and invasive vegetation control should take place throughout all phases to prevent loss of floral habitat.</li> </ul>
<b>Loss of Aquatic Biota</b>	<p><b><u>Construction:</u></b></p> <ul style="list-style-type: none"> <li>• Runoff from road surfaces</li> <li>• Sedimentation</li> <li>• Discharge of sewage</li> <li>• Discharge of solvents, chemicals and hydrocarbons</li> </ul>	<ul style="list-style-type: none"> <li>• Bi-annual biomonitoring of aquatic macro-invertebrates and fish community structure within the riverine system is essential.</li> </ul>

	<p><b><u>Operational:</u></b></p> <ul style="list-style-type: none"> <li>• Maintenance of vehicles and machinery</li> <li>• Runoff from road surfaces</li> <li>• Discharge of sewage</li> <li>• Discharge of solvents, chemicals and hydrocarbons</li> <li>• Excavation from the watercourses and the release of nutrients and pollutants from disturbed soils</li> <li>• Removal of substrate within wetlands</li> <li>• Sedimentation from stockpile runoff</li> </ul>	
<b>Loss of Terrestrial Fauna</b>	<p><b><u>Construction and Operational:</u></b></p> <ul style="list-style-type: none"> <li>• Vegetation loss and disturbance – clearing of vegetation</li> <li>• Excessive noise disturbances</li> <li>• Illegal hunting</li> <li>• Habitat fragmentation destruction</li> <li>• Vehicles driving through natural vegetated areas</li> </ul>	<ul style="list-style-type: none"> <li>• Site clearing to take place in a phased manner (where possible) to allow for any faunal species present to move away from the study site to the surrounding open space areas.</li> <li>• Prior and during vegetation clearance any larger fauna species noted should be given the opportunity to move away from the construction machinery.</li> <li>• Fauna species such as frogs and reptiles that have not moved away should be carefully and safely removed to a suitable location beyond the extent of the development footprint by a suitably qualified ECO trained in the handling and relocation of animals.</li> <li>• Fencing should be erected around the project area to prevent workers and members of the public from entering the surrounding environments. This fence should have small openings to allow wildlife to pass through.</li> </ul>

		<ul style="list-style-type: none"> <li>Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site.</li> <li>Should any sensitive or Red Data animal or bird species be encountered during the construction, operation and decommissioning activities, these should be relocated to natural areas in the vicinity. This is especially applicable to the Giant Bullfrog (<i>Pyxicephalus adspersus</i>) which is of special conservation concern and protected under NEMBA. Any sensitive fauna that are inadvertently killed during earthmoving operations should be preserved as museum voucher specimens.</li> <li>No hunting, trapping or killing of fauna are allowed.</li> <li>Any lizards, snakes or monitors encountered should be allowed to escape to a suitable habitat away from disturbance.</li> <li>General avoidance of snakes is the best policy if encountered. Snakes should not be intentionally harmed or killed and allowed free movement away from the area.</li> <li>Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.</li> </ul>
<b>Loss of Terrestrial Flora</b>	<p><b><u>Construction and Operational:</u></b></p> <ul style="list-style-type: none"> <li>Vegetation clearance</li> <li>Vehicles driving through natural vegetated areas</li> <li>Habitat fragmentation and destruction</li> <li>Stockpiling</li> </ul>	<ul style="list-style-type: none"> <li>Areas that are stripped during construction and operation should be re-vegetated with indigenous vegetation as soon as possible. This will also reduce the likelihood of encroachment by alien invasive plant species.</li> <li>Protected trees and plants shall not be removed or damaged without prior approval, permits or licenses from the relevant authority. This is especially applicable to the Protected Camel Thorn (<i>Vachellia erioloba</i>) tree, which potentially occurs on site.</li> </ul>

<p><b>Introduction and spread of alien vegetation</b></p>	<p><b><u>Construction:</u></b></p> <ul style="list-style-type: none"> <li>• Clearing of vegetation</li> </ul> <p><b><u>Operational:</u></b></p> <ul style="list-style-type: none"> <li>• Removal of substrate within watercourses</li> <li>• Clearing of vegetation during mining operations</li> <li>• Vehicles driving in and through watercourses</li> </ul> <p><b><u>Decommissioning:</u></b></p> <ul style="list-style-type: none"> <li>• Damage to vegetated areas</li> <li>• Ineffective rehabilitation measures</li> <li>• Vehicles driving in and through watercourses</li> </ul>	<ul style="list-style-type: none"> <li>• Proliferation of alien and invasive species is expected within any disturbed areas particularly as there are some alien and invasive species present within the study site. These species should be eradicated and controlled to prevent further spread beyond.</li> <li>• An alien invasive vegetation management plan should be developed and implemented.</li> <li>• Alien and invasive vegetation control should take place throughout all phases to prevent loss of floral habitat.</li> <li>• Footprint areas should be kept as small as possible when removing alien plant species.</li> <li>• No vehicles should be allowed to drive through designated sensitive drainage and wetlands areas during the eradication of alien and weed species.</li> <li>• All alien vegetation in the riparian zone should be removed upon completion of mining activities and reseeded with indigenous grasses as specified by a suitably qualified specialist (ecologist).</li> </ul>
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- Loss of topsoil – Topsoil may be lost due to poor topsoil management (burial, erosion, etc.) during construction related soil profile disturbance (levelling, excavations, disposal of spoils from excavations etc.) The effect will be the loss of soil fertility on disturbed areas after rehabilitation.

Loss of topsoil	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Geographical extent	Site (1)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	High (3)	High (3)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Significant (3)	Marginal (2)
Cumulative impact	Medium cumulative impact (3).	
<b>Significance</b>	<b>Negative Medium (39)</b>	<b>Negative Medium (33)</b>
Can impacts be mitigated?	<p>The following mitigation or management measures are provided:</p> <ul style="list-style-type: none"> <li>• If an activity will mechanically disturb below surface in any way, then any available topsoil should first be stripped from the entire surface and stockpiled for re-spreading during rehabilitation.</li> <li>• Topsoil stockpiles must be conserved against losses through erosion by establishing vegetation cover on them.</li> <li>• Dispose of all subsurface spoils from excavations where they will not impact on undisturbed land.</li> <li>• During rehabilitation, the stockpiled topsoil must be evenly spread over the entire disturbed surface.</li> <li>• Erosion must be controlled where necessary on top soiled areas.</li> </ul> <p>Establish an effective record keeping system for each area where soil is disturbed for constructional purposes. These records should be included in environmental performance reports, and should include all the records below.</p> <ul style="list-style-type: none"> <li>• Record the GPS coordinates of each area.</li> <li>• Record the date of topsoil stripping.</li> <li>• Record the GPS coordinates of where the topsoil is stockpiled.</li> <li>• Record the date of cessation of constructional (or operational) activities at the particular site.</li> <li>• Photograph the area on cessation of constructional activities.</li> <li>• Record date and depth of re-spreading of topsoil.</li> <li>• Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment</li> </ul>	

	<p>and evaluate progress of restoration over time.</p> <p>Section (f) of the EMPr also provide mitigation measures related to topsoil management.</p>
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- **Soil erosion** – Soil erosion due to alteration of the land surface run-off characteristics. Alteration of run-off characteristics may be caused by construction related land surface disturbance, vegetation removal and the establishment of roads. Erosion will cause loss and deterioration of soil resources. The erosion risk is low due to the low slope gradients and low to moderate erodibility of the soils.

<b>Soil erosion</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Geographical extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal (2)	Marginal (2)
Cumulative impact	Medium cumulative impact (2).	
<b>Significance</b>	<b>Negative Medium (33)</b>	<b>Negative medium (22)</b>
Can impacts be mitigated?	<p>The following mitigation or management measures are provided: Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.</p> <p>Include periodical site inspection in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records the occurrence any erosion on site or downstream – refer to section (f) of the EMPr.</p>	

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

### **Community Noise**

Community noise impacts should not exceed the levels presented in Table below of South African Standards or result in a maximum increase above background levels of 3 dBA at the nearest receptor location off-site.

- The noise levels are relevant to noise impacts beyond the property boundary of the facility. However, noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline at the most sensitive point of reception. A point of reception or receptor may be defined as any point on the premises occupied by persons where extraneous noise and/or vibration are received.
- South African National Standard (SANS) 10103 (2008) provides a guideline for estimating community response to an increase in the general ambient noise level caused by intruding noise.

SITE	WHO / IFC LAEQ (1H) DBA		SOUTH AFRICAN STANDARDS	
	DAY	NIGHT	DAY	NIGHT
	07:00 – 19:00	19:00 – 07:00	07:00 – 19:00	19:00 – 07:00
Residential; Institutional; Educational	55	45	55	45
Industrial, Commercial	70	70	70	60

The possible noise and increased ground vibration during blasting and mine activities can however be controlled by means of approved acoustic screening measures, state of the art equipment, proper noise management principles, compliance to the Local Noise Regulations, and the International Finance Corporation's Environmental Health and Safety Guidelines.

Temporary noise disturbance	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Definite (4)	Probable (3)
Duration	Short term (1)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	The impact would result in negligible to no cumulative effects (1).	
<b>Significance</b>	<b>Negative medium (30)</b>	<b>Negative low (20)</b>
Can impacts be mitigated?	Yes, management actions related to noise pollution are included in section (f) of the EMPr.	

- Generation of waste - general waste, construction waste, sewage and grey water - The workers on site are likely to generate general waste such as food wastes, packaging, bottles, etc. The applicant will need to ensure that general waste is appropriately disposed of i.e. taken to the nearest licensed landfill.

Sanitation for mine employees will consist of sufficient ablution facilities portable toilets serviced by one septic tank which is pumped out regularly. No further sanitation infrastructure is envisioned for the proposed expansion of the mining activities.

No pit latrines, French drain systems or soak away systems shall be allowed.

Generation of waste	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local/district (2)	Local/district (2)
Probability	Definite (4)	Definite (4)
Duration	Short term (1)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Medium cumulative impact (3) - An additional demand for landfill space could result in significant cumulative impacts if services become unstable or unavailable, which in turn would negatively impact on the local community.	

<b>Significance</b>	<b>Negative medium (39)</b>	<b>Negative low (26)</b>
Can impacts be mitigated?	Yes, it is therefore important that all management actions and mitigation measures included in section (f) of the EMPr are implemented.	

Groundwater: The following impacts were identified from the Hydrogeological Investigation conducted on site Refer to **Appendix 11-1** for the study.

Rating of impacts and mitigations – Construction Phase

<b>Potential Environmental Impact</b>	<b>Environmental Impact Before Mitigation</b>			<b>Recommended Mitigation Measures</b>	<b>Environmental Impact After Mitigation</b>		
	<b>Total</b>	<b>Status (+ Or -)</b>	<b>Significance</b>		<b>Total</b>	<b>Status (+ Or -)</b>	<b>Significance</b>
Contamination from hydrocarbon Spills	27	-	Medium	<ul style="list-style-type: none"> <li>All vehicles must be regularly inspected for leaks.</li> <li>Re-fuelling must take place on a sealed surface area to prevent hydrocarbon pollution.</li> <li>All spills should be cleaned up immediately and disposed of.</li> <li>A credible company should remove used oil from the workshops;</li> <li>Spill kits should be readily available and easily accessible throughout the site.</li> <li>All chemicals must be stored safely on site, outside the buffer areas and surrounded by bunds. Chemical storage containers must be regularly inspected for early leak detection.</li> <li>An emergency spill procedure should be developed and implemented.</li> </ul>	6	-	Low

- Impacts on heritage objects – Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft. The preservation and appropriate management of new discoveries in accordance with the NHRA, should these be discovered during construction activities.

The following are findings and recommendations from the Palaeontological Desktop Assessment conducted.

#### **Findings and recommendations**

*The proposed development is mostly underlain by the Allanridge Formation (Platberg Group, Ventersdorp Supergroup), while a small portion of Quaternary alluvium is present along the riverbed. Sediments of the Eccra Group also underlie the south-eastern margin of the development. According to the South African Heritage Resources Information System, the Palaeontological Sensitivity of the Allanridge Formation is Low, Quaternary alluvium is Low but locally High while that of the Eccra Group is High. In this development diamond Prospecting is limited to the Allanridge Formation (Platberg Group, Ventersdorp Supergroup) and Quaternary alluvium along the riverbed. For this reason, a Low Palaeontological Sensitivity has been allocated to the proposed development. It is therefore considered that the proposed mining will not lead to detrimental impacts on the palaeontological heritage of the area.*

*If fossil remains are discovered during any phase of construction, either on the surface or exposed by excavations the Chance Find Protocol must be implemented by the Environmental Control Officer (ECO) in charge of these developments. These discoveries ought to be protected (if possible, in situ) and the ECO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: [www.sahra.org.za](http://www.sahra.org.za)) so that correct mitigation (recording and collection) can be carry out by a paleontologist.*

Impacts on heritage objects	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (2)
Duration	Short term (1)	Short term (1)
Magnitude	Very high (4)	Medium (2)
Reversibility	Irreversible (4)	Irreversible (4)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Low cumulative impact (2). Should these impacts occur, there may be a cumulative impact on the preservation of heritage objects in the area.	
<b>Significance</b>	<b>Negative medium (48)</b>	<b>Negative low (24)</b>
Can impacts be mitigated?	<p>If archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. Also refer to section (f) of the EMPr.</p> <p>The following shall apply:</p> <ul style="list-style-type: none"> <li>Known sites should be clearly marked in order that they can be avoided during construction activities.</li> <li>The contractors and workers should be notified that archaeological sites might be exposed during the construction activities.</li> <li>Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;</li> <li>All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental</li> </ul>	

	<ul style="list-style-type: none"> <li>• Control Officer will advise the necessary actions to be taken;</li> <li>• Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and</li> <li>• Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).</li> </ul> <p>In order to achieve this, the following should be in place:</p> <ul style="list-style-type: none"> <li>• A person or entity, e.g. the Environmental Control Officer, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage.</li> <li>• Known sites should be located and isolated, e.g. by fencing them off. All construction workers should be informed that these are no-go areas, unless accompanied by the individual or persons representing the Environmental Control Officer as identified above.</li> <li>• In areas where the vegetation is threatening the heritage sites, e.g. growing trees pushing walls over, it should be removed, but only after permission for the methods proposed has been granted by SAHRA. A heritage official should be part of the team executing these measures.</li> </ul>
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According to the Phase I Heritage Impact Assessment conducted by J A van Schalkwyk (D Litt et Phil), the below are the proposed mitigations for the two farms which could be visited.



Impact analysis of cultural heritage resources under threat of the proposed development, is based on the present understanding of the development:

Site No.	Site type	NHRA category	Field rating	Impact rating: Before/After mitigation
7.1.1	Archaeological resources	Section 35	Provincial/Grade 2: High significance	Medium (56) Low (14)
<b>Mitigation:</b> (1) Avoidance/Preserve: A buffer zone should be developed around the site, extending from the outer occurrence of identified features, on the eastern, western, northern and southern sides, for at least 200m.				

Site No.	Site type	NHRA category	Field rating	Impact rating: Before/After mitigation
7.3.1	Graves, Cemeteries and Burial Grounds	Section 36	Generally protected 4B: Medium significance	Medium (40) Low (14)
<b>Mitigation:</b> (1) Avoidance/Preserve: A minimum buffer of 100m must be established around the burial site for the duration of the prospecting/mining phase.				

Site No.	Site type	NHRA category	Field rating	Impact rating: Before/After mitigation
7.3.2	Graves, Cemeteries and Burial Grounds	Section 36	Generally protected 4A: High/medium significance	Medium (40) Low (14)
<b>Mitigation:</b> (1) Avoidance/Preserve: A minimum buffer of 100m must be established around the burial site for the duration of the prospecting/mining phase.				

Site No.	Site type	NHRA category	Field rating	Impact rating: Before/After mitigation
7.3.3	Structures older than 60 years	Section 34	Generally protected 4B: Medium significance	Medium (40) Low (14)
<b>Mitigation:</b> (2) Archaeological investigation: This option should be implemented when it is impossible to avoid impacting on an identified site or feature.				

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

- Increase in vehicle traffic – The movement of heavy vehicles have the potential to damage local roads and create dust and safety impacts for other road users in the area.

The movement of heavy vehicles during the clearance of vegetation and topsoil has the potential to damage local farm roads and create dust and safety impacts for other road users in the area.

Access will be obtained from the R504. The volume of traffic along this road is medium to high and the movement of heavy vehicles along this road is likely to damage the road surface and impact on other road users.

Increase in vehicle traffic	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Probable (3)
Duration	Short term (1)	Short term (1)

Magnitude	High (3)	Medium (2)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Medium cumulative impact (3). If damage to roads is not repaired then this will affect the farming activities in the area and result in higher maintenance costs for vehicles of local farmers and other road users. The costs will be borne by road users who were no responsible for the damage.	
<b>Significance</b>	<b>Negative medium impacts (33)</b>	<b>Negative low (11)</b>
Can impacts be mitigated?	<p>The potential impacts associated with heavy vehicles can be effectively mitigated. The mitigation measures include:</p> <ul style="list-style-type: none"> <li>The contractor must ensure that damage caused by construction on the roads are repaired. The costs associated with the repair must be borne by the contractor;</li> <li>Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers;</li> <li>All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits.</li> </ul> <p>Also refer section (f) of the EMPr. For mitigation measures related to traffic.</p>	

- Risk to safety, livestock and farm infrastructure** - The presence on and movement of workers on and off the site poses a potential safety threat to local farmer's and farm workers in the vicinity of the site threat.

In addition, farm infrastructure, such as fences and gates, may be damaged and stock losses may also result from gates being left open and/or fences being damaged or stock theft linked either directly or indirectly to the presence of farm workers on the site.

<b>Risk to safety, livestock and farm infrastructure</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Probable (3)
Duration	Medium term (2)	Medium term (2)
Magnitude	Very High (4)	Medium (2)
Reversibility	Barely reversible (3)	Partly reversible (2)
Irreplaceable loss of resources	Significant resource (3)	Marginal resource (2)
Cumulative impact	Medium cumulative effects (3), provided losses are compensated for.	
<b>Significance</b>	<b>Negative High (64)</b>	<b>Negative low (28)</b>
Can impacts be mitigated?	<p>Key mitigation measures include:</p> <ul style="list-style-type: none"> <li><b>JH Delwery (Pty) Ltd</b> should enter into an agreement with the local farmers in the area</li> </ul>	

	<p>whereby damages to farm property etc. during the construction phase will be compensated for. The agreement should be signed before the construction phase commences;</p> <ul style="list-style-type: none"> <li>• The construction area should be fenced off prior to the commencement of the construction phase. The movement of construction workers on the site should be confined to the fenced off area;</li> <li>• Contractors appointed by <b>JH Delwery (Pty) Ltd</b> should provide daily transport for low and semi-skilled workers to and from the site. This would reduce the potential risk of trespassing on the remainder of the farm and adjacent properties;</li> <li>• <b>JH Delwery (Pty) Ltd</b> should hold contractors liable for compensating farmers in full for any stock losses and/or damage to farm infrastructure that can be linked to construction workers. This should be contained in the Code of Conduct to be signed between the proponent, the contractors and neighbouring landowners. The agreement should also cover losses and costs associated with fires caused by construction workers or construction related activities (see below);</li> <li>• The Environmental Management Programme (EMPr) should outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested;</li> <li>• Contractors appointed <b>JH Delwery (Pty) Ltd</b> must ensure that all workers are informed at the outset of the construction phase of the conditions contained on the Code of Conduct, specifically consequences of stock theft and trespassing on adjacent farms.</li> <li>• Contractors appointed by <b>JH Delwery (Pty) Ltd</b> must ensure that construction workers who are found guilty of trespassing, stealing livestock and/or damaging farm infrastructure are dismissed and charged. This should be contained in the Code of Conduct. All dismissals must be in accordance with South African labour legislation;</li> <li>• The housing of construction workers on the site should be strictly limited to security personnel (if any).</li> </ul>
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- Increased risk of veld fires - The presence of construction workers and construction-related activities on the site poses an increased risk of grass fires that could in turn pose a threat to livestock, crops and farmsteads in the area.

In the process, farm infrastructure may also be damaged or destroyed and human lives threatened. The potential risk of grass fires was heightened by the windy conditions in the area, especially during the dry, windy winter months from May to October. In terms of potential mitigation measures, a fire-break should be constructed around the perimeter of the site prior to the commencement of the construction phase. In addition, fire-fighting equipment should be provided on site during the construction phase.

Increased risk of veld fires	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative

Extent	Region (3)	Local (2)
Probability	Probable (3)	Probable (3)
Duration	Medium term (2)	Short term (1)
Magnitude	High (3)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Negligible cumulative effects (1), provided losses are compensated for.	
<b>Significance</b>	<b>Negative medium (33)</b>	<b>Negative low (9)</b>
Can impacts be mitigated?	<p>The mitigation measures include:</p> <ul style="list-style-type: none"> <li>• A fire-break should be constructed around the perimeter of the site prior to the commencement of the construction phase;</li> <li>• Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas;</li> <li>• Contractor to ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high risk dry, windy winter months;</li> <li>• Contractor to provide adequate firefighting equipment on-site, including a fire fighting vehicle;</li> <li>• Contractor to provide fire-fighting training to selected construction staff;</li> <li>• No construction staff, with the exception of security staff, to be accommodated on site over night;</li> <li>• As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the firefighting costs borne by farmers and local authorities.</li> </ul>	

## OPERATIONAL PHASE

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

- Soil erosion – The largest risk factor for soil erosion will be during the operational phase when the prospecting activity ensues and soil is left bare until rehabilitation is initiated. Erosion will be localised within the site. This will ultimately lead to the irretrievable commitment of this resource.

The measurable effect of reducing erosion by utilizing mitigation measures may reduce possible erosion significantly.

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

- Change in land-use – The use of the area for the operation of the prospecting activity will not disturb any agricultural activities on most of the portions as both will be done concurrently.

<b>Change in land use</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Province (3)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	medium term (2)	medium term (2)
Magnitude	High (3)	Medium (2)
Reversibility	Barely reversible (3)	Partly reversible (2)
Irreplaceable loss of resources	Significant loss of resource (3)	Marginal loss of resource (2)
Cumulative impact	Medium cumulative impacts (3).	
<b>Significance</b>	<b>Negative high (54)</b>	<b>Negative medium (30)</b>
Can impacts be mitigated?	The proponent should establish a Rehabilitation Fund to be used to rehabilitate the area once the proposed facility has been decommissioned. The fund should be funded by revenue generated during the operational phase of the project. The motivation for the establishment of a Rehabilitation Fund is based on the experience in the mining sector where many mines on closure have not set aside sufficient funds for closure and decommissioning.  Also refer to section (f) of the EMPr.	

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



Generation of alternative land use income	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Positive	Positive
Geographical extent	Site (1)	Site (1)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	High (3)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resources (1)	No loss of resources (1)
Cumulative impact	Medium cumulative impact (3).	
<b>Significance</b>	<b>Positive Low (24)</b>	<b>Positive medium (39)</b>
Can impacts be mitigated?	No mitigation required.	

- Increase in storm water runoff – The development will potentially result in an increase in storm water run-off that needs to be managed to prevent soil erosion, especially where vegetation will be cleared.

Not all the vegetation should be removed at once. Only the specific trench being excavated at the specific time should be cleared

Increase in storm water runoff	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Unlikely (1)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Medium cumulative impact (3) - Should these impacts occur, there will be a cumulative impacts on the wider area.	
<b>Significance</b>	<b>Negative medium (30)</b>	<b>Negative low (13)</b>
Can impacts be mitigated?	<p>Yes. It is therefore important that all management actions and mitigation measures included in section (f) of the EMP. are implemented to ensure that these impacts do not occur</p> <p>The cut-off trenches and silt fences will be installed where necessary as to control runoff storm water by attenuating it and control the movement of sediment on the premises.</p> <p>These structures will be monitored on a regular basis. It is suggested that it be monitored on a weekly basis during the rainy season, and after possible rain events during the dry season.</p> <p>If these practices is found to be insufficient for the control of storm water and sedimentation, other alternatives should immediately be investigated and implemented.</p>	



Increased consumption of water - Since 2 x 16 feet washing pans will be used, the amount of water for the pans will be 34 000 L/hour from which 30% is re-used.

Increased consumption of water	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Region (3)	Region (3)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	Medium (2)
Reversibility	Irreversible (4)	Irreversible (4)
Irreplaceable loss of resources	Significant loss of resources (3)	Marginal loss of resources (2)
Cumulative impact	High cumulative impacts (4) - An additional demand on water sources could result in a significant cumulative impact with regards to the availability of water.	
<b>Significance</b>	<b>Negative medium impact (42)</b>	<b>Negative medium (40)</b>
Can impacts be mitigated?	Yes, management actions and mitigation measures related to the use of water are included in section (f) of the EMPr.	

- Groundwater:

The following impacts were identified from the Hydrogeological Investigation conducted on site Refer to **Appendix 11-1** for the study. *The potential groundwater impacts from the site, direct and indirect, is summarised in table below. In summary these potential impacts contribute to overall groundwater impacts and include:*

- ✚ Potential alteration in groundwater quality; and
- ✚ Aquifer destruction / over abstractions of groundwater.

#### Summary of potential groundwater impacts

Major Aspect	Key Environmental Issues/ Potential Issues
Contamination from Hydrocarbon Spills	Hydrocarbon spills from construction vehicles and fuel storage areas may contaminate the groundwater resource locally
Groundwater contamination from tailings material	Due to the relatively high amount of carbonate and low amounts of sulphide, tailings are not likely to generate Acid Rock Drainage. The presence of calcium, magnesium and sodium in the rock results in a need to manage elevated Total Dissolved Solids (TDS) in seepage and runoff.
Aquifer destruction /over abstractions of groundwater	The sustainable use of the groundwater is important to avoid water being pumped from the aquifer faster than it is being replenished. Over abstraction of the aquifer could result is decreasing water tables, empty wells, higher pumping costs and ultimately the destruction of the groundwater resource. It is therefore crucial to adhere to the sustainable safe yield and abstraction programs to ensure the aquifer is not overstressed.

#### Rating of impacts and mitigations – Operational Phase

Potential Environmental Impact	Environmental Impact Before Mitigation			Recommended Mitigation Measures	Environmental Impact After Mitigation		
	Total	Status (+ Or -)	Significance		Total	Status (+ Or -)	Significance
Contamination from Hydrocarbon Spills	27	-	Medium	<ul style="list-style-type: none"> <li>All vehicles must be regularly inspected for leaks.</li> <li>Re-fuelling must take place on a sealed surface area to prevent hydrocarbon pollution.</li> <li>All spills should be cleaned up immediately and disposed of.</li> <li>A credible company should remove used oil from the workshops;</li> <li>Spill kits should be readily available and easily accessible throughout the site.</li> <li>All chemicals must be stored safely on site, outside the buffer areas and surrounded by bunds. Chemical storage containers must be regularly inspected for early leak detection.</li> <li>An emergency spill procedure should be developed and implemented.</li> </ul>	6	-	Low
Contamination from tailings material	16	-	Low	<p>Tailings material must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds. Proper storm water management should be implemented. Berms should also be constructed to ensure separation of clean water and dirty water areas; Concurrent rehabilitation should be conducted; The monitoring results must be interpreted annually, and network audited annually as</p>	14	-	Low

Potential Environmental Impact	Environmental Impact Before Mitigation			Recommended Mitigation Measures	Environmental Impact After Mitigation		
	Total	Status (+ Or -)	Significance		Total	Status (+ Or -)	Significance
				well to ensure compliance with regulations;			
Aquifer destruction /over abstractions of groundwater	22	-	Low	No mitigation possible Although unlikely to occur, should any local groundwater user's resource be impacted on by operations at the mine the affected party should be provided with an alternative water source Groundwater levels should be monitored regularly and should any negative trends in groundwater levels be observed suitable mitigation should be implemented.	18	-	Low

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

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

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

Leakage of hazardous materials	Pre-mitigation impact rating	Post mitigation impact rating
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Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Unlikely (1)
Duration	Long term (3)	Long term (3)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	The impact would result in negligible to no cumulative effects (1)	
<b>Significance</b>	<b>Negative medium (36)</b>	<b>Negative low (22)</b>
Can impacts be mitigated?	<p>Yes. To manage these impacts all staff and supervisors at workshops and fuel storage areas should be trained in hydrocarbon spill response and each of these areas should be equipped with the appropriate spill response kits and any contaminated soil must be disposed of correctly at a suitable location.</p> <p>It is therefore important that all management actions and mitigation measures included in the section (f) of EMPr are implemented to ensure that these impacts do not occur.</p>	

- Noise disturbance - Prospecting activities will result in the generation of noise over a period of 3-5 years. Sources of noise are likely to include vehicles, the use of machinery such as backactors, rotary pans and people working on the site, as well as occasional blasting. The noise impact is likely to be significant as the closest

The following three primary variables should be considered when designing acoustic screening measures for the control of sound and/or noise:

- The source – Reduction of noise at the source;
- The transmission path – Reduction of noise between the source and the receiver;
- The receiver – Reduction of the noise at the receiver.

Increased noise levels are directly linked with the various activities associated with the construction of the proposed facility and related infrastructure, as well as the operational phase of the activity

<b>Temporary noise disturbance</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Definite (4)	Probable (3)
Duration	Medium term (2)	Medium term (2)
Magnitude	Very high (4)	High (3)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	The impact would result in medium cumulative effects (3).	
<b>Significance</b>	<b>Negative High (52)</b>	<b>Negative medium (36)</b>
Can impacts be mitigated?	Yes, management actions related to noise pollution are included in section (f) of the EMPr.	

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

- Potential impact on tourism – The impact of the proposed prospecting of diamond alluvial on the areas sense of place with mitigation is likely to be low. In addition, the site will be visible from the existing tar and gravel roads.

Potential impacts on tourism	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Very high (4)	Very high (4)
Reversibility	Barely reversible (3)	Barely reversible (3)
Irreplaceable loss of resources	Significant loss of resources (3)	Significant loss of resources (3)
Cumulative impact	Medium cumulative impacts (3)	
<b>Significance</b>	<b>Negative high (56)</b>	<b>Negative high (56)</b>
Can impacts be mitigated?	No mitigation required	

#### DECOMMISSIONING PHASE (MINE CLOSURE AND REHABILITATION)

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

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

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

## Ecological Desktop Assessment

### Decommissioning Phase Impact Assessment

Potential Environmental Impact	Environmental Impact Before Mitigation					Significance	Environmental Impact After Mitigation					Significance
	Frequency of Impact	Frequency of Activity	Severity	Spatial Scale	Duration		Frequency of Impact	Frequency of Activity	Severity	Spatial Scale	Duration	
Alteration of the flow regime of the watercourse	3	4	2	2	2	42 Low	2	2	2	1	2	20 Very-Low
Loss of terrestrial habitat	3	4	3	2	2	49 Low	2	2	2	1	2	20 Very-Low
Changing the physical structure within a water resource (habitat)	4	4	2	1	4	56 Medium-Low	3	3	2	1	2	30 Low
Introduction and spread of alien vegetation	4	4	2	1	4	56 Medium-Low	2	2	3	1	2	24 Very-Low

#### INDIRECT AND CUMULATIVE IMPACTS:

- Habitat changes due to channel and sediment-size changes;
- Downstream bed degradation due to sediment deficient flow from the mining area;
- Possible impact on the remaining catchment due to changes in run-off characteristics;
- Alteration of flow (hydraulic changes) and stream bed characteristics potentially hinder movement of fishes and aquatic invertebrates;
- Loss of floristic and faunistic biodiversity; and
- Changes to *in situ* chemical parameters (temperature and dissolved oxygen) with possible change to water velocity and flow.



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

Loss of employment	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Possible (2)
Duration	Medium term (2)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	The impact would result in negligible to no cumulative effects (1)	
<b>Significance</b>	<b>Negative medium (30)</b>	<b>Negative low (18)</b>
Can impacts be mitigated?	<p>The following mitigation measures are recommended:</p> <ul style="list-style-type: none"> <li>• All structures and infrastructure associated with the proposed facility should be dismantled and transported off-site on decommissioning;</li> <li>• <b>JH Delwery (Pty) Ltd</b> should establish an Environmental Rehabilitation Trust Fund to cover the costs of decommissioning and rehabilitation of disturbed areas.</li> </ul>	

- Groundwater

Rating of impacts and mitigations – Post-closure Phase

Potential Environmental Impact	Environmental Impact Before Mitigation			Recommended Mitigation Measures	Environmental Impact After Mitigation		
	Total	Status (+ Or -)	Significance		Total	Status (+ Or -)	Significance
Contamination from tailings material	16	-	Low	<ul style="list-style-type: none"> <li>• Tailings material must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds</li> <li>• Rehabilitation should be conducted.</li> </ul>	14	-	Low

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

## K. SUMMARY OF THE FINDINGS AND RECOMMENDATIONS OF ANY SPECIALIST REPORT

(where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report):-

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS
Hydrogeological Investigation	<p>The following are findings and recommendations from the Hydrogeological Investigation conducted.</p> <p><b><u>Groundwater Levels</u></b></p> <p><i>The static groundwater levels ranged between 13.15 and 14.7mbgl. Groundwater in the area was mainly used for stock watering purposes.</i></p> <p><b><u>Groundwater Abstraction</u></b></p> <p><i>Based on the adopted analytical method with general assumptions on the aquifer characteristics, which provide a reasonable estimate of inflow rate, an approximate volume of 12 000m<sup>3</sup>/annum should be abstracted keep excavations dry within low laying areas for mining to continue.</i></p> <p><b><u>Hydrological Impact Assessment</u></b></p> <p><i>During the construction phase, groundwater is used to supply the mining activities (e.g., dust suppression, mineral screening). Over abstraction can occur, it is therefore crucial to adhere to the sustainable safe yield and abstraction programs to ensure the aquifer is not overstressed.</i></p> <p><i>Seepage from tailings material can occur, which will have a low impact should mitigation not be implemented. To manage these impacts, tailings material must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds. Concurrent rehabilitation should also be conducted.</i></p>

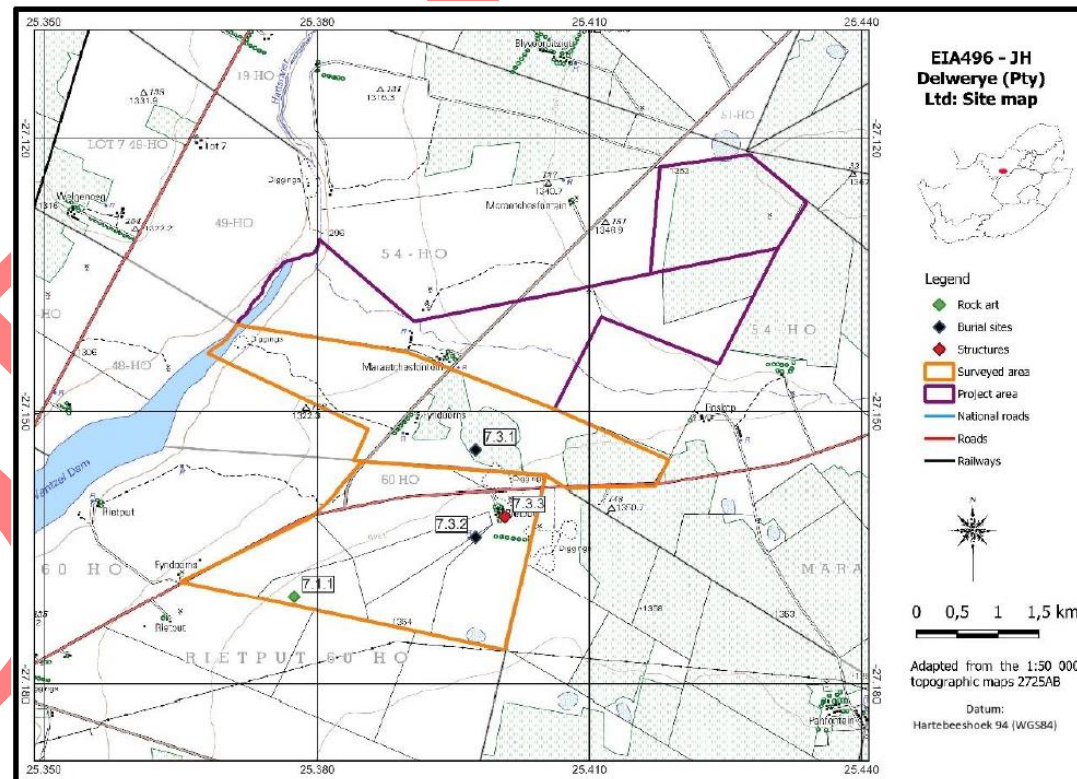
	<p><i>During the closure phase the contamination of groundwater can occur from tailings material. However, can be mitigated by means of concurrent rehabilitation during the operational phase.</i></p> <p><b><u>Groundwater Management Plan</u></b></p> <p><i>The groundwater inflows into the mine workings are expected to be dependent on seasonal variations and increases to approximately 84.9m3/day during the wet season. This could be sufficiently controlled using a sump pump where the water is evacuated from the excavations.</i></p>
Palaeontological Desktop Assessment	<p>The following are findings and recommendations from the Palaeontological Desktop Assessment conducted.</p> <p><b><u>Summary of Impacts</u></b></p> <p><i>Only the site will be affected (1). It is unlikely that the impact will occur (1). The expected duration of the impact is assessed as potentially permanent to long term (4). The impact on fossil heritage will be irreversible and a complete loss of fossil heritage will take place (4). The cumulative effect of the impact will be low (2). The magnitude of the impact happening will be low (1).</i></p> <p><i>The Impact significance will therefore be a negative low Impact</i></p> <p><b><u>Findings and recommendations</u></b></p> <p><i>The proposed development is mostly underlain by the Allanridge Formation (Platberg Group, Ventersdorp Supergroup), while a small portion of Quaternary alluvium is present along the riverbed. Sediments of the Eccca Group also underlie the south-eastern margin of the development. According to the South African Heritage Resources Information System, the Palaeontological Sensitivity of the Allanridge Formation is Low, Quaternary alluvium is Low but locally High while that of the Eccca Group is High. In this development diamond Prospecting is limited to the Allanridge Formation (Platberg Group, Ventersdorp Supergroup) and Quaternary alluvium along the riverbed. For this reason, a Low Palaeontological Sensitivity has been allocated to the proposed development. It is therefore considered that the proposed mining will not lead to detrimental impacts on the palaeontological heritage of the area.</i></p>

*If fossil remains are discovered during any phase of construction, either on the surface or exposed by excavations the Chance Find Protocol must be implemented by the Environmental Control Officer (ECO) in charge of these developments. These discoveries ought to be protected (if possible, in situ) and the ECO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: [www.sahra.org.za](http://www.sahra.org.za)) so that correct mitigation (recording and collection) can be carry out by a paleontologist.*

**NB:** As access could not be obtained for two sections of the application area, Remaining Extent and Portion 9 (Portion of Portion 2) of the farm Maraetchesfontein 54, they were not included in the field survey as well as the resultant report.

The below findings were recorded on site by J A van Schalkwyk

## Phase I Heritage Impact Assessment:



### **Identified sites**

During the survey the following sites, features or objects of cultural significance were identified.

- 7.3.1 Rock engraving site: A significant number of rock engravings, most of which can possibly be attributed to the San. Different styles can be identified: line drawings, pecked drawings and a combination of the techniques. Some recent graffiti, mostly initials of a number of individuals, were scratched on some of the rocks. The site is located on an outcrop of Ventersdorp lava, covering a distance of approximately 500m in length.
- 7.3.1 Burial site: Two graves. One is a stone cairn with the name Nonnie Swart on a simple wood cross. The second is that of a young boy, M Bothma, born November 1950 and died March 1952.
- 7.3.2 Burial site: Approximately 20 graves marked only with stone cairns. No names and dates are visible or known to the landowner. No descendants have visited the graves in the past number of years.
- 7.3.3 Cattle kraal: Well-constructed cattle kraal built with local stone. It is currently still in use and is well looked after.

### **Reasoned opinion as to whether the proposed activity should be authorised:**

- From a heritage point of view, it is recommended that the proposed prospecting activities be allowed to continue on acceptance of the proposed mitigation measures and the conditions proposed below.

### **Conditions for inclusion in the environmental authorisation:**

- The Palaeontological Sensitivity Map (<https://sahris.sahra.org.za/map/palaeo>) indicate that the project area has a low possibility of fossil remains to be found and therefore no palaeontological studies are required, however a protocol for finds is required.
- Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. The appropriate steps to take are indicated in Section 9 of the report, as well as in the Management Plan: Burial Grounds and Graves, with reference to general heritage sites, in the Addendum, Section 12.4

<p>Desktop Watercourse Delineation and Ecological Impact Assessment</p>	<p>According to the desktop Watercourse Delineation and Ecological Impact Assessment Report, the following were concluded</p> <ul style="list-style-type: none"> <li>• According to the South African National Biodiversity Institute (SANBI), the proposed site overlaps within the Schweizer-Reneke Bushveld vegetation Ecosystem.</li> <li>• According to data sourced from South African National Biodiversity Institute (SANBI), the study site does not overlap with any formally Protected Area.</li> <li>• No Important Bird and Biodiversity Areas (IBAs) were identified within the vicinity of the study site (Birdlife 2019);</li> <li>• Majority of the proposed study area falls within category C, and therefore has high biodiversity importance according to the Mining and Biodiversity Guideline (2013);</li> <li>• The study site falls within the Southern Kalahari Ecoregion.</li> <li>• According to the National Wetland map5 (2018), a Channelled valley Bottom wetland (Hartz River), two Depressions and a Seep wetland occurs on site.</li> <li>• According to data sourced from South African National Biodiversity Institute (SANBI), the proposed site is located within the Threatened Schweizer-Reneke Bushveld Ecosystem. This ecosystem is classified as Vulnerable.</li> </ul> <p><u>Fauna and Flora Species Desktop Analysis:</u></p> <ul style="list-style-type: none"> <li>• Several Alien and Invasive Vegetation Species potentially occur on site.</li> <li>• Several species possibly occurring on site are protected under NEMBA. Although not listed in the species list, the Giant Bullfrog (Pyxicephalus adspersus) which is of special conservation concern and protected under NEMBA is expected to occur.</li> </ul> <p>Species of importance such as the Vachellia erioloba (Camel thorn tree) and the Pyxicephalus adspersus (Giant Bullfrog) are expected to occur on site. It is therefore recommended to complete field verification to confirm desktop information, and to assess the current state of the wetland for a more robust and comprehensive assessment.</p>
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See **Appendix 11** for the specialist report.



According to the DEA Screening Report, nine (9) specialist assessments needs to be conducted, please see the table below for the list of these studies and also our response.

<b>Specialist assessments needed according to the DEA Screening Report:</b>	<b>Response</b>
Terrestrial Biodiversity Impact Assessment	A desktop Watercourse Delineation and Ecological Impact Assessment was conducted.
Agricultural Impact Assessment	
Aquatic Biodiversity Impact Assessment	
Plant Species Assessment	
Animal Species Assessment	
Archaeological and Cultural Heritage Impact Assessment	Findings and recommendations from the Archaeological and Cultural Heritage Impact Assessment are included on the table above
Palaeontology Impact Assessment	Findings and recommendations from the Palaeontological Desktop Assessment are included on the table above
Noise Impact Assessment	We do not see the need for this study as noise is limited to working hours
Radioactivity Impact Assessment	This study is not necessary since the process of prospecting Diamonds does not have any radioactive effects.

## **L. AN ENVIRONMENTAL IMPACT STATEMENT WHICH CONTAINS—**

### **(i) a summary of the key findings of the environmental impact assessment:**

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

- Potential impacts on biodiversity: The entire study site overlaps with CBA areas according to a matrix of recommended land use zones and associated activities in relation to the CBA map categories. Majority of the study site is observed to overlap with CBA 1 areas. The remaining fragments were observed to overlap with ESA 2 areas. Prospecting is not permitted, and actively discouraged in CBA 1 areas. In CBA 2 and ESA areas; prospecting is restricted to compulsory, site specific conditions and controls. When these conditions are unavoidable, prospecting is usually not permitted. In the case of this application, prospecting is not permitted within CBA 1 areas, and restricted (not usually permitted) in ESA 2 areas (Northwest Biodiversity Sector Plan, 2015)
- Potential social impacts: The presence of construction workers poses a potential risk to family structures and social networks.

While the presence of construction workers does not in itself constitute a social impact, the manner in which construction workers conduct themselves can impact on local communities.

The most significant negative impact is associated with the disruption of existing family structures and social networks.

- Potential negative impacts: (noise, dust, soil degradation, storm water, traffic, health and safety) associated with the operation of the facility are expected to be of low-medium impact, of medium terms and site specific. These can be mitigated or negated through the implementation of practical and appropriate mitigation measures.
- Positive impacts: The prospecting of alluvial diamonds will have socio-economic benefit to the area.

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

### **(i) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred [site] development footprint on the approved site as contemplated in the accepted scoping report indicating any areas that should be avoided, including buffers; and**

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

Refer to Site layout Map attached in **Appendix 4**.

### **(ii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;**

There are regional socio economic benefits due to the alluvial diamonds being prospected in the North West Province and greater knowledge is gained on the mineralogy of South Africa. All possible negative impacts and risks that have been identified in this report can be effectively mitigated and managed by implementing the mitigation measures as set out in the Environmental Management Programme (EMPr) attached in Part B. Significant adverse social environmental impacts are anticipated.

#### **M. PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPr**

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

Management objectives include:

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

Expected outcomes include:

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

#### **N. FINAL PROPOSED ALTERNATIVES.**

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

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. Scoping and EIA process for a Prospecting Right of Diamonds Alluvial (DA), Diamonds General (D) & Diamonds in Kimberlite (DK) including associated infrastructure, structure and earthworks on the remaining extent, remaining extent of portion 1 (fijndoorns), portion 9 (portion of portion 2) of the farm Maraetchesfontein 54 and remaining extent of portion 4 of the farm Rietput 60, Registration Division: HO, North West Province is preferred due to the sites underlying alluvial diamond bearing gravel, therefore there will be no other alternative (i.e. to facilitate the movement of machinery, equipment, infrastructure).

#### **O. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION.**

**(Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;)**

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

- Implementation of the proposed mitigation measures set out in the EMPr.

**P. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE.**

**(Which relate to the assessment and mitigation measures proposed)**

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

**Q. REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED**

**(and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;)**

**Reasons why the activity should be authorized or not.**

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

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

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

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

**Conditions that must be included in the authorisation**

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

The EMPr should be binding on all managers and contractors operating/utilizing the site. The applicant shall familiarize himself with the content of this document and the attached specialist studies and the requirements/conditions thereof.

**R. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.**

For a minimum of 5 years.

**S. AN UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP IN RELATION TO:**

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

I, Ms. Percy Sehaole Reg EAP (EAPASA) Pr. Sci. Nat. herewith confirms

- A. the correctness of the information provided in the reports ☒
- B. the inclusion of comments and inputs from stakeholders and I&APs ; ☒
- C. the inclusion of inputs and recommendations from the specialist reports where relevant; ☒and
- D. the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed; ☒

*Rehoole.*

Signature of the environmental assessment practitioner:

Milnex CC – Environmental Consultants

Name of company:

07 – 01 - 2022

Date:

#### **T. FINANCIAL PROVISION**

**(where applicable, details of any financial provision[s] for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;)**

xxxxxxxxxxxxxxxxxxxx

#### **A. Explain how the aforesaid amount was derived.**

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

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

##### **Financial Guarantee**

The financial guarantee for the rehabilitation for land disturbed by **JH Delwery (Pty) Ltd** will be submitted

##### **Rehabilitation Fund**

**JH Delwery (Pty) Ltd** will also make provision for rehabilitation during closure by establishing a rehabilitation trust.

#### **U. DEVIATIONS FROM THE APPROVED SCOPING REPORT AND PLAN OF STUDY.**

##### **(i) Any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and**

None of the methodologies approved for the scoping report were deviated

**(ii) Motivation for the deviation.**

Not applicable

**V. ANY SPECIFIC INFORMATION THAT MAY BE REQUIRED BY THE COMPETENT AUTHORITY; AND**

**W. COMPLIANCE WITH THE PROVISIONS OF SECTIONS 24(4)(A) AND (B) OF THE ACT**

Read with Section 24 (3) (A) and (7) of the National Environmental Management Act (Act 107 of 1998). The EIA Report must include the:

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

- iii. 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).

- Refer to the Paleontological Study conducted
- Refer to the Phase 1 HIA conducted

**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**).

The remaining extent, remaining extent of portion 1 (fijndoorns), portion 9 (portion of portion 2) of the farm Maraetchesfontein 54 and remaining extent of portion 4 of the farm Rietput 60, Registration Division: HO, North West Province is preferred due to the sites underlying geology and the shallowness of the diamond bearing gravel to the surface as well as site access (i.e. to facilitate the movement of machinery, equipment, infrastructure and people). The specific site has been chosen for its mineral resources thus making an alternative site selection null and void.



## PART B

### ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

**An EMP must comply with section 24N of the Act and include—**

#### A. DETAILS OF—

- (i) the EAP who prepared the EMP; and
- (ii) the expertise of that EAP to prepare an EMP, including a curriculum vitae;

NAME OF PRACTITIONER	QUALIFICATIONS	CONTACT DETAILS
Ms. Percy Sehaole Pr. Sci. Nat. Reg. EAP (EAPASA)	Master's Degree in Environmental Science  Master's Degree in Environmental Management (refer to <b>Appendix 1</b> )	Tel No.: (018) 011 1925 Fax No.: (053) 963 2009 e-mail address: <a href="mailto:percy@milnex-sa.co.za">percy@milnex-sa.co.za</a>
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It is hereby confirmed that the requirements for the provision of the details and expertise of the EAP are contained in Part A, section 1(a) as required. The Curriculum Vitae for the responsible EAP is contained in **Appendix 1 and 2**.

#### B. DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

**(a detailed description of the aspects of the activity that are covered by the EMP as identified by the project description;)**

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

#### C. COMPOSITE MAP

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

Refer to Locality Map, attached as in **Appendix 4**.

**D. A DESCRIPTION OF THE IMPACT MANAGEMENT [OBJECTIVES] OUTCOMES, INCLUDING MANAGEMENT STATEMENTS, IDENTIFYING THE IMPACTS AND RISKS THAT NEED TO BE AVOIDED, MANAGED AND MITIGATED AS IDENTIFIED THROUGH THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR ALL PHASES OF THE DEVELOPMENT INCLUDING—**

- i) **Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described in 2.4 herein)

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

- All prospecting related infrastructure, foundations and concrete areas will be decommissioned, removed from the site and appropriately disposed of. Reclaimable structures such as metal, electrical installations or equipment will be sold for re-use or as scrap.
- All disturbed areas within the site not already vegetated will be re-vegetated with appropriate indigenous, ecologically adapted species appropriate to the area and the final land use as soon as possible after operation ceases. Progress of vegetation growth/establishment, stability and drainage/erosion will be monitored and, in the event of adverse trends being identified, corrective measures will be implemented.
- Vegetation monitoring will consider, inter alia, the establishment of perennial ground cover and infestation by alien invasive plant species. The encroachment of indigenous vegetation into the area will be used as an indication of a stable, self-sustaining vegetation cover with little risk of retrogressing to a situation where are and water pollution may occur.
- Final landforms must be resilient to perturbation and also be self-sustaining to obviate/limit further/ongoing interventions and maintenance by **JH Delwery (Pty) Ltd.** The remaining impacts be of an acceptable nature with minimal deterioration over time.
- The final outcome of the mine site rehabilitation would be productive systems, where required sustaining either cattle or wildlife.
- Environmental and human quality of life, including health and safety requirements in general, would not be compromised; and
- Closure is achieved in an efficient and cost-effective manner as possible and with minimum socioeconomic changes.

**E. A DESCRIPTION AND IDENTIFICATION OF IMPACT MANAGEMENT OUTCOMES REQUIRED FOR THE ASPECTS CONTEMPLATED IN PARAGRAPH (D);]**

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

**1. Upfront planning/development**

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

**2. Physical stability**

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

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

### 3. Environmental quality

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

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

### 4. Health and safety

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

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

### 5. Land capability / land use

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

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

### 6. Aesthetic quality

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

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

### 7. Landscape viability

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

- Conducting surface profiling, with associated material movement optimisation, to obtain a landscape resembling the natural landscapes to support the succession trajectory towards a climax ecological system.
- Establishing woody patches and create “rough and loose” areas for pioneer specie establishment around the respective patches.
- Establishing pioneer species as follows:

- Collected and prepared seeds for broad casting;
- Seedlings grown on on-site nursery;
- Cuttings collected from surrounding veld areas;
- Conducting rehabilitation monitoring and corrective action as required.

#### **8. Biodiversity**

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

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

#### **F. A DESCRIPTION OF PROPOSED IMPACT MANAGEMENT ACTIONS, IDENTIFYING THE MANNER IN WHICH THE IMPACT MANAGEMENT [OBJECTIVES AND] OUTCOMES CONTEMPLATED IN PARAGRAPH (D) [AND (E)] WILL BE ACHIEVED, AND MUST, WHERE APPLICABLE, INCLUDE ACTIONS TO —**

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

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

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

**XXXXXXXXXXXXX**

- a. **Confirm that the financial provision will be provided as determined.**

##### **Financial Guarantee**

The financial guarantee for the rehabilitation for land disturbed **JH Delwery (Pty) Ltd** will be submitted

##### **Rehabilitation Fund**

**JH Delwery (Pty) Ltd** will also make provision for rehabilitation during closure by establishing a rehabilitation trust.

## IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

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

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p><b>(E.g. For prospecting</b> - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc</p> <p><b>E.g. For mining</b>,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>(of operation in which activity will take place.</p> <p>State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure).</p>	<p>(volumes, tonnages and hectares or m<sup>2</sup>)</p>	<p>(describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p>	<p>(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>	<p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-..</p> <p>Upon cessation of the individual activity</p> <p>Or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>
Clearance of vegetation	Pitting and trenching phase- (construction and operation phase)	1604.534 Ha – 100 pits (3m x 2m x 3m) & 30 trenches (40m x 30m x 3m)	<ol style="list-style-type: none"> <li>1. Site clearing must take place in a phased manner, as and when required.</li> <li>2. Areas which are not to be prospected on within two months must not be cleared to reduce erosion risks.</li> <li>3. The area to be cleared must be clearly demarcated and this footprint strictly maintained.</li> </ol>	Compliance with Duty of Care as detailed within NEMA	Duration of operations on the prospecting activities.

			<ol style="list-style-type: none"> <li>Spoil that is removed from the site must be removed to an approved spoil site or a licensed landfill site.</li> <li>The necessary silt fences and erosion control measures must be implemented in areas where these risks are more prevalent.</li> </ol>		
Construction of roads	Pitting and trenching phase- (construction and operation phase)	+/- 500m	<ol style="list-style-type: none"> <li>Planning of access routes to the site for construction/prospecting purposes shall be done in conjunction with the Contractor and the Landowner. All agreements reached should be documented and no verbal agreements should be made. The Contractor shall clearly mark all access roads. Roads not to be used shall be marked with a "NO ENTRY for prospecting vehicles" sign.</li> <li>Construction routes and required access roads must be clearly defined.</li> <li>Damping down of the un-surfaced roads must be implemented to reduce dust and nuisance.</li> <li>Soils compacted by construction/prospecting activities shall be deep ripped to loosen compacted layers and re-graded to even running levels.</li> <li>The contractor must ensure that damage caused by related traffic to the gravel access road off the N8 is repaired continuously. The costs associated with the repair must be borne by the contractor;</li> <li>Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on</li> </ol>	Compliance with Duty of Care as detailed within NEMA	Duration of operations on the prospecting activities.



			<p>a regular basis and ensuring that vehicles used to transport the gravel are fitted with tarpaulins or covers;</p> <p>7. All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits.</p>		
Prospecting of Alluvial Diamonds – Soils and geology	Pitting and trenching phase- (construction and operation phase)	1604.534 Ha – 100 pits (3m x 2m x 3m) & 30 trenches (40m x 30m x 3m)	<p>1. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil (If topsoil exists), and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas.</p> <p>2. Care must be taken not to mix topsoil and subsoil during stripping.</p> <p>3. The topsoil must be conserved on site in and around the pit/trench area.</p> <p>4. Subsoil and overburden in the prospecting area should be stockpiled separately to be returned for backfilling in the correct soil horizon order.</p> <p>5. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project.</p>	Compliance with Duty of Care as detailed within NEMA	Duration of operations on the mine

			<p>Stockpiles may further be protected by the construction of berms, trenches or low brick walls around their bases.</p> <p>6. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding.</p> <p>7. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof from an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager.</p> <p>8. The impact on the geology will be permanent. There is no mitigation measure.</p>		
Prospecting Alluvial Diamonds – excavations and blasting	Pitting and trenching phase- (construction and operation phase)	1604.534 Ha – 100 pits (3m x 2m x 3m) & 30 trenches (40m x 30m x 3m)	<p>1. The prospecting activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development.</p> <p>2. Mine, pans, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed in to the system.</p> <p>3. Truck traffic should be routed away from noise sensitive areas, where possible.</p>	Compliance with Duty of Care as detailed within NEMA	Duration of operations on the prospecting area

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

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

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE In which impact is anticipated	MITIGATION TYPE	STANDARD TO BE ACHIEVED
(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.).	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)		(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  E.g. <ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> <li>• Remedy through rehabilitation..</li> </ul>	(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Clearance of vegetation	Loss or fragmentation of habitats	Fauna & flora	Pitting and trenching phase- (construction and operation phase)	<b>Existing vegetation</b> <ol style="list-style-type: none"> <li>1. Vegetation removal must be limited to the prospecting area.</li> <li>2. Vegetation to be removed as it becomes necessary rather than removal of all vegetation throughout the site in one step.</li> <li>3. No vegetation to be used for firewood.</li> <li>4. Exotic and invasive plant species should not be allowed to establish, if the development is approved.</li> </ol> <b>Rehabilitation</b>	Minimisation of impacts to acceptable limits

				<p>5. All damaged areas shall be rehabilitated upon completion of the contract.</p> <p>6. Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to construction.</p> <p>7. All natural areas impacted during construction/prospecting must be rehabilitated with locally indigenous grasses typical of the representative botanical unit.</p> <p>8. Rehabilitation must take place in a phased approach as soon as possible.</p> <p>9. Rehabilitation process must make use of species indigenous to the area. Seeds from surrounding seed banks can be used for re-seeding.</p> <p>10. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.</p> <p>11. Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.</p> <p><b>Demarcation of prospecting area</b></p> <p>12. All plants not interfering with prospecting operations shall be left undisturbed clearly marked and indicated on the site plan.</p> <p>13. The prospecting area must be well demarcated and no construction/prospecting activities must be allowed outside of this demarcated footprint.</p> <p>14. Vegetation removal must be phased in order to reduce impact of construction/prospecting.</p> <p>15. Site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas.</p> <p>16. Strict and regular auditing of the prospecting process to ensure containment of the prospecting and laydown areas.</p> <p>17. Soils must be kept free of petrochemical solutions that may be kept on site during construction/prospecting. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.</p> <p><b>Utilisation of resources</b></p> <p>18. Gathering of firewood, fruit, muti plants, or any other natural material onsite or in areas adjacent to the site is prohibited unless with prior approval of the ECO.</p>	
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				<p><b>Exotic vegetation</b></p> <p>19. Alien vegetation on the site will need to be controlled.</p> <p>20. The Contractor should be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.</p> <p>21. The spread of exotic species occurring throughout the site should be controlled.</p> <p><b>Herbicides</b></p> <p>22. Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used.</p> <p>23. The use of pesticides and herbicides on the site must be discouraged as these impact on important pollinator species of indigenous vegetation.</p> <p><b>Fauna</b></p> <p>24. Rehabilitation to be undertaken as soon as possible after the prospecting activities have been completed.</p> <p>25. No trapping or snaring to fauna on the construction/prospecting site should be allowed.</p> <p>26. No faunal species must be disturbed, trapped, hunted or killed by maintenance staff during any routine maintenance at the development.</p>	
Prospecting Alluvial Diamonds-excavations	Loss of topsoil	Soil	Pitting and trenching phase-(construction and operation phase)	<p>1. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil, and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas.</p> <p>2. Care must be taken not to mix topsoil and subsoil during stripping.</p> <p>3. The topsoil must be conserved on site in and around the pit/trench area.</p>	Minimisation of impacts to acceptable limits

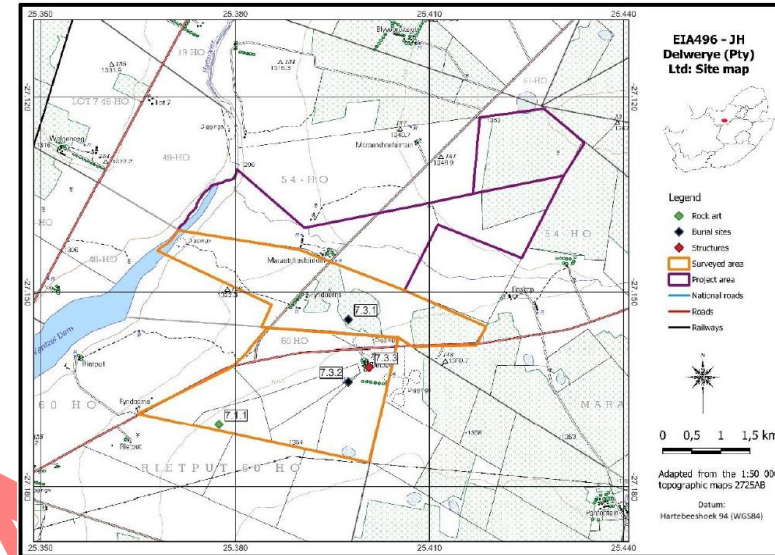


				<ol style="list-style-type: none"> <li>4. Subsoil and overburden in the prospecting area should be stockpiled separately to be returned for backfilling in the correct soil horizon order.</li> <li>5. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases.</li> <li>6. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding.</li> <li>7. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof from an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager.</li> </ol> <p>Establish an effective record keeping system for each area where soil is disturbed for prospecting purposes. These records should be included in environmental performance reports, and should include all the records below.</p> <ul style="list-style-type: none"> <li>• Record the GPS coordinates of each area.</li> <li>• Record the date of topsoil stripping.</li> <li>• Record the GPS coordinates of where the topsoil is stockpiled.</li> <li>• Record the date of cessation prospecting activities at the particular site.</li> <li>• Photograph the area on cessation of prospecting activities.</li> <li>• Record date and depth of re-spreading of topsoil.</li> <li>• Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time.</li> </ul>	
	Erosion	Soil Air Water	Pitting and trenching phase-(construction and operation phase)	<ol style="list-style-type: none"> <li>1. An effective system of run-off control should be implemented, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.</li> <li>2. Periodical site inspection should be included in environmental performance reporting that inspects the</li> </ol>	Minimisation of impacts to acceptable limits

				<p>effectiveness of the run-off control system and specifically records the occurrence of any erosion on site or downstream.</p> <ol style="list-style-type: none"> <li>3. Wind screening and stormwater control should be undertaken to prevent soil loss from the site.</li> <li>4. The use of silt fences and sand bags must be implemented in areas that are susceptible to erosion.</li> <li>5. Other erosion control measures that can be implemented are as follows: <ul style="list-style-type: none"> <li>o Brush packing with cleared vegetation</li> <li>o Mulch or chip packing</li> <li>o Planting of vegetation</li> <li>o Hydroseeding/hand sowing</li> </ul> </li> <li>6. Sensitive areas need to be identified prior to construction/prospecting so that the necessary precautions can be implemented.</li> <li>7. All erosion control mechanisms need to be regularly maintained.</li> <li>8. Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces.</li> <li>9. Retention of vegetation where possible to avoid soil erosion.</li> <li>10. Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.</li> <li>11. Re-vegetation of disturbed surfaces should occur immediately after construction/prospecting activities are completed. This should be done through seeding with indigenous grasses.</li> <li>12. No impediment to the natural water flow other than approved erosion control works is permitted.</li> <li>13. To prevent stormwater damage, the increase in stormwater run-off resulting from construction/prospecting activities must be estimated and the drainage system assessed accordingly.</li> <li>14. Stockpiles not used in three (3) months after stripping must be seeded or backfilled to prevent dust and erosion.</li> </ol>	
	Air Pollution	Air	Pitting and trenching phase-(construction and operation phase)	<p><b>Dust control</b></p> <ol style="list-style-type: none"> <li>1. Wheel washing and damping down of un-surfaced and un-vegetated areas.</li> <li>2. Retention of vegetation where possible will reduce dust travel.</li> </ol>	Minimisation of impacts to acceptable limits

				<ol style="list-style-type: none"> <li>3. Clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas.</li> <li>4. Damping down of all exposed soil surfaces with a water bowser or sprinklers when necessary to reduce dust.</li> <li>5. The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the neighbouring communities.</li> <li>6. A speed limit of 30km/h must not be exceeded on site.</li> <li>7. Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor.</li> <li>8. Any dirt roads that are utilised by the workers must be regularly maintained to ensure that dust levels are controlled.</li> </ol> <p><b>Odour control</b></p> <ol style="list-style-type: none"> <li>9. Regular servicing of vehicles in order to limit gaseous emissions.</li> <li>10. Regular servicing of onsite toilets to avoid potential odours.</li> </ol> <p><b>Rehabilitation</b></p> <ol style="list-style-type: none"> <li>11. The Contractor should commence rehabilitation of exposed soil surfaces as soon as practical after completion of earthworks.</li> </ol> <p><b>Fire prevention</b></p> <ol style="list-style-type: none"> <li>12. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires.</li> <li>13. The Contractor shall have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.</li> </ol>	
	Noise		Pitting and trenching phase- (construction and operation phase)	<ol style="list-style-type: none"> <li>1. The prospecting activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development.</li> <li>2. Mine, crushers, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the</li> </ol>	Minimisation of impacts to acceptable limits

				<p>Contractor(s), the sites must be evaluated in detail and specific measures designed in to the system.</p> <ol style="list-style-type: none"> <li>Truck traffic should be routed away from noise sensitive areas, where possible.</li> <li>Noise levels must be kept within acceptable limits.</li> <li>Noisy operations should be combined so that they occur where possible at the same time.</li> <li>Mine workers to wear necessary ear protection gear.</li> <li>Noisy activities to take place during allocated hours.</li> <li>Noise from labourers must be controlled.</li> <li>Noise suppression measures must be applied to all equipment. Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from the site.</li> <li>The Contractor must take measures to discourage labourers from loitering in the area and causing noise disturbance. Where possible labour shall be transported to and from the site by the Contractor or his Sub-Contractors by the Contractors own transport.</li> <li>Implementation of enclosure and cladding of processing plants.</li> <li>Applying regular and thorough maintenance schedules to equipment and processes. An increase in noise emission levels very often is a sign of the imminent mechanical failure of a machine.</li> </ol>	
	Impact on potential cultural and heritage artefacts	Heritage	Pitting and trenching phase- (construction and operation phase)	<p><b>NB:</b> As access could not be obtained for two sections of the application area, Remaining Extent and Portion 9 (Portion of Portion 2) of the farm Maraetchesfontein 54, they were not included in the field survey as well as the resultant report.</p> <p>The below findings were recorded on site by J A van Schalkwyk</p>	Minimisation of impacts to acceptable limits



#### Identified sites

During the survey the following sites, features or objects of cultural significance were identified.

- 7.3.1 Rock engraving site: A significant number of rock engravings, most of which can possibly be attributed to the San. Different styles can be identified: line drawings, pecked drawings and a combination of the techniques. Some recent graffiti, mostly initials of a number of individuals, were scratched on some of the rocks. The site is located on an outcrop of Venterdorp lava, covering a distance of approximately 500m in length.
- 7.3.1 Burial site: Two graves. One is a stone cairn with the name Nonnie Swart on a simple wood cross. The second is that of a young boy, M Bothma, born November 1950 and died March 1952.

				<ul style="list-style-type: none"> <li>• 7.3.2 Burial site: Approximately 20 graves marked only with stone cairns. No names and dates are visible or known to the landowner. No descendants have visited the graves in the past number of years.</li> </ul> <p>7.3.3 Cattle kraal: Well-constructed cattle kraal built with local stone. It is currently still in use and is well looked after.</p> <p><b><u>Conditions for inclusion in the environmental authorisation:</u></b></p> <ul style="list-style-type: none"> <li>• The Palaeontological Sensitivity Map (<a href="https://sahris.sahra.org.za/map/palaeo">https://sahris.sahra.org.za/map/palaeo</a>) indicate that the project area has a low possibility of fossil remains to be found and therefore no palaeontological studies are required, however a protocol for finds is required.</li> <li>• Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. The appropriate steps to take are indicated in Section 9 of the report, as well as in the Management Plan: Burial Grounds and Graves, with reference to general heritage sites, in the Addendum, Section 12.4</li> </ul>	
Waste management		Pollution	Pitting and trenching phase- (construction and operation phase)	<p><b>Litter management</b></p> <ol style="list-style-type: none"> <li>1. Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction site.</li> <li>2. The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at registered/licensed landfill.</li> <li>3. Good housekeeping practices should be implemented to regularly maintain the litter and rubble situation on the construction site.</li> <li>4. If possible and feasible, all waste generated on site must be separated into glass, plastic, paper, metal and wood and recycled. An independent contractor can be appointed to conduct this recycling.</li> <li>5. Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor</li> </ol>	Minimisation of impacts to acceptable limits



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

				<p>3. The quality and quantity of effluent streams discharged to the environment including stormwater should be managed and treated to meet applicable effluent discharge guidelines.</p> <p>4. Discharge to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria outside a scientifically established mixing zone.</p> <p>5. Efficient oil and grease traps or sumps should be installed and maintained at refueling facilities, workshops, fuel storage depots, and containment areas and spill kits should be available with emergency response plans.</p> <p><b>Stormwater</b></p> <p>6. The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids and silt or chemical pollutants.</p> <p>7. Silt fences should be used to prevent any soil entering the stormwater drains.</p> <p>8. Temporary cut off drains and berms may be required to capture stormwater and promote infiltration.</p> <p>9. Promote a water saving mind set with construction/prospecting workers in order to Contractor ensure less water wastage.</p> <p>10. Hazardous substances must be stored at least 40m from any water bodies on site to avoid pollution.</p> <p>11. The installation of the stormwater system must take place as soon as possible to attenuate stormwater from the construction phase as well as the operation phase.</p> <p>12. Earth, stone and rubble is to be properly disposed of, or utilized on site so as not to obstruct natural water path ways over the site. i.e. these materials must not be placed in stormwater channels, drainage lines or rivers.</p> <p>13. There should be a periodic checking of the site's drainage system to ensure that the water flow is unobstructed.</p> <p>14. If a batching plant is necessary, run-off should be managed effectively to avoid contamination of other areas of the site. Untreated runoff from the batch plant must not be allowed to get into the storm water system or nearby streams, rivers or erosion channels or dongas.</p>	
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				<p>The cut-off trenches and silt fences will be installed where necessary as to control runoff storm water by attenuating it and control the movement of sediment on the premises.</p> <p>These structures will be monitored on a regular basis. It is suggested that it be monitored on a weekly basis during the rainy season, and after possible rain events during the dry season.</p> <p>If these practices is found to be insufficient for the control of storm water and sedimentation, other alternatives should immediately be investigated and implemented.</p> <p><b>Groundwater resource protection</b></p> <ol style="list-style-type: none"> <li>15. Process solution storage ponds and other impoundments designed to hold non fresh water or non-treated process effluents should be lined and be equipped with sufficient wells to enable monitoring of water levels and quality.</li> <li>16. Prevent dirty water runoff from leaving the general mining area;</li> <li>17. Compact the base of dirty areas, like the workshops and oil and diesel storage areas to minimise infiltration of poor-quality water to the underlying aquifers;</li> <li>18. Enough supply of absorbent fibre should be kept at the site to contain accidental spills;</li> <li>19. Contain dirty water in return water dams and re-use dirty water for dust suppression and make up water in the plant;</li> <li>20. Proper storm water management should be implemented. Berms should also be constructed to ensure separation of clean water and dirty water areas;</li> <li>21. A detailed mine closure plan should be prepared during the operational phase, including a risk assessment, water resource impact prediction etc. as stipulated in the DWS Best Practice Guidelines. The implementation of the mine closure plan, and the application for the closure certificate can be conducted during the decommissioned phase.</li> </ol>	
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### IMPACT MANAGEMENT ACTIONS

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

ACTIVITY Whether listed or not listed.	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
(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.).	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<p>(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)</p> <p>E.g.</p> <ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> </ul> <p>Remedy through rehabilitation..</p>	<p>Describe the time period when the measures in the environmental management programme must be implemented</p> <p>Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity.</p> <p>.With regard to Rehabilitation,</p>	<p>(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>



			<p>therefore state either:-</p> <p>..</p> <p>Upon cessation of the individual activity</p> <p>or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>	
Clearance of vegetation	Loss or fragmentation of habitats	<p><b>Existing vegetation</b></p> <ol style="list-style-type: none"> <li>1. Vegetation removal must be limited to the prospecting site.</li> <li>2. Vegetation to be removed as it becomes necessary rather than removal of all vegetation throughout the site in one step.</li> <li>3. No vegetation to be used for firewood.</li> <li>4. Exotic and invasive plant species should not be allowed to establish, if the development is approved.</li> </ol> <p><b>Rehabilitation</b></p> <ol style="list-style-type: none"> <li>5. All damaged areas shall be rehabilitated upon completion of the contract.</li> <li>6. Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to construction.</li> <li>7. All natural areas impacted during construction/prospecting must be rehabilitated with locally indigenous grasses typical of the representative botanical unit.</li> <li>8. Rehabilitation must take place in a phased approach as soon as possible.</li> <li>9. Rehabilitation process must make use of species indigenous to the area. Seeds from surrounding seed banks can be used for re-seeding.</li> <li>10. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.</li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<p>11. Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.</p> <p><b>Demarcation of prospecting area</b></p> <p>12. All plants not interfering with prospecting operations shall be left undisturbed clearly marked and indicated on the site plan.</p> <p>13. The prospecting area must be well demarcated and no construction activities must be allowed outside of this demarcated footprint.</p> <p>14. Vegetation removal must be phased in order to reduce impact of construction/prospecting.</p> <p>15. Site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas.</p> <p>16. Strict and regular auditing of the prospecting process to ensure containment of the prospecting and laydown areas.</p> <p>17. Soils must be kept free of petrochemical solutions that may be kept on site during construction/prospecting. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.</p> <p><b>Utilisation of resources</b></p> <p>18. Gathering of firewood, fruit, muti plants, or any other natural material onsite or in areas adjacent to the site is prohibited unless with prior approval of the ECO.</p> <p><b>Exotic vegetation</b></p> <p>19. Alien vegetation on the site will need to be controlled.</p> <p>20. The Contractor should be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.</p> <p>21. The spread of exotic species occurring throughout the site should be controlled.</p> <p><b>Herbicides</b></p> <p>22. Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding</p>		
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		<p>environment shall be properly investigated and only environmentally friendly herbicides shall be used.</p> <p>23. The use of pesticides and herbicides on the site must be discouraged as these impact on important pollinator species of indigenous vegetation.</p> <p><b>Fauna</b></p> <p>24. Rehabilitation to be undertaken as soon as possible after prospecting has been completed.</p> <p>25. No trapping or snaring to fauna on the construction/prospecting site should be allowed.</p> <p>26. No faunal species must be disturbed, trapped, hunted or killed by maintenance staff during any routine maintenance at the development.</p>		
Prospecting of Alluvial Diamonds – excavations	Loss of topsoil	<ol style="list-style-type: none"> <li>1. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil, and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction/prospecting and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas.</li> <li>2. Care must be taken not to mix topsoil and subsoil during stripping.</li> <li>3. The topsoil must be conserved on site in and around the pit/trench area.</li> <li>4. Subsoil and overburden in the prospecting area should be stockpiled separately to be returned for backfilling in the correct soil horizon order.</li> <li>5. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases.</li> <li>6. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding.</li> <li>7. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof from an approved waste disposal site</li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<p>where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager.</p> <p>Establish an effective record keeping system for each area where soil is disturbed for prospecting purposes. These records should be included in environmental performance reports, and should include all the records below.</p> <ul style="list-style-type: none"> <li>Record the GPS coordinates of each area.</li> <li>Record the date of topsoil stripping.</li> <li>Record the GPS coordinates of where the topsoil is stockpiled.</li> <li>Record the date of cessation prospecting activities at the particular site.</li> <li>Photograph the area on cessation of prospecting activities.</li> <li>Record date and depth of re-spreading of topsoil.</li> <li>Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time.</li> </ul>		
	Erosion	<ol style="list-style-type: none"> <li>An effective system of run-off control should be implemented, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.</li> <li>Periodical site inspection should be included in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records the occurrence of any erosion on site or downstream.</li> <li>Wind screening and stormwater control should be undertaken to prevent soil loss from the site.</li> <li>The use of silt fences and sand bags must be implemented in areas that are susceptible to erosion.</li> <li>Other erosion control measures that can be implemented are as follows: <ul style="list-style-type: none"> <li>Brush packing with cleared vegetation</li> <li>Mulch or chip packing</li> <li>Planting of vegetation</li> <li>Hydroseeding/hand sowing</li> </ul> </li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<ol style="list-style-type: none"> <li>6. Sensitive areas need to be identified prior to construction/prospecting so that the necessary precautions can be implemented.</li> <li>7. All erosion control mechanisms need to be regularly maintained.</li> <li>8. Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces.</li> <li>9. Retention of vegetation where possible to avoid soil erosion.</li> <li>10. Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.</li> <li>11. Re-vegetation of disturbed surfaces should occur immediately after construction/prospecting activities are completed. This should be done through seeding with indigenous grasses.</li> <li>12. No impediment to the natural water flow other than approved erosion control works is permitted.</li> <li>13. To prevent stormwater damage, the increase in stormwater run-off resulting from construction/prospecting activities must be estimated and the drainage system assessed accordingly. A drainage plan must be submitted to the Engineer for approval and must include the location and design criteria of any temporary stream crossings.</li> <li>14. Stockpiles not used in three (3) months after stripping must be seeded/backfilled to prevent dust and erosion.</li> </ol>		
	Air Pollution	<p><b>Dust control</b></p> <ol style="list-style-type: none"> <li>14. Wheel washing and damping down of un-surfaced and un-vegetated areas.</li> <li>15. Retention of vegetation where possible will reduce dust travel.</li> <li>16. Clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas.</li> <li>17. Damping down of all exposed soil surfaces with a water bowser or sprinklers when necessary to reduce dust.</li> <li>18. The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the neighbouring communities.</li> <li>19. A speed limit of 30km/h must not be exceeded on site.</li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<p>20. Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor.</p> <p>21. Any dirt roads that are utilised by the workers must be regularly maintained to ensure that dust levels are controlled.</p> <p><b>Odour control</b></p> <p>22. Regular servicing of vehicles in order to limit gaseous emissions.</p> <p>23. Regular servicing of onsite toilets to avoid potential odours.</p> <p><b>Rehabilitation</b></p> <p>24. The Contractor should commence rehabilitation of exposed soil surfaces as soon as practical after completion of earthworks.</p> <p><b>Fire prevention</b></p> <p>25. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires.</p> <p>26. The Contractor shall have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.</p>		
	Noise	<p>1. The prospecting activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development.</p> <p>2. Pans, power plants, crushers, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed in to the system.</p> <p>3. Truck traffic should be routed away from noise sensitive areas, where possible.</p> <p>4. Noise levels must be kept within acceptable limits.</p> <p>5. Noisy operations should be combined so that they occur where possible at the same time.</p> <p>6. Mine workers to wear necessary ear protection gear.</p> <p>7. Noisy activities to take place during allocated hours.</p>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.



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

		<p>Impact analysis of cultural heritage resources under threat of the proposed development, is based on the present understanding of the development:</p> <table border="1"> <thead> <tr> <th>Site No.</th><th>Site type</th><th>NHRA category</th><th>Field rating</th><th>Impact rating: Before/After mitigation</th></tr> </thead> <tbody> <tr> <td>7.1.1</td><td>Archaeological resources</td><td>Section 35</td><td>Provincial/Grade 2: High significance</td><td>Medium (56) Low (14)</td></tr> </tbody> </table> <p><b>Mitigation:</b> (1) Avoidance/Preserve: A buffer zone should be developed around the site, extending from the outer occurrence of identified features, on the eastern, western, northern and southern sides, for at least 200m.</p> <table border="1"> <thead> <tr> <th>Site No.</th><th>Site type</th><th>NHRA category</th><th>Field rating</th><th>Impact rating: Before/After mitigation</th></tr> </thead> <tbody> <tr> <td>7.3.1</td><td>Graves, Cemeteries and Burial Grounds</td><td>Section 36</td><td>Generally protected 4B: Medium significance</td><td>Medium (40) Low (14)</td></tr> </tbody> </table> <p><b>Mitigation:</b> (1) Avoidance/Preserve: A minimum buffer of 100m must be established around the burial site for the duration of the prospecting/mining phase.</p> <table border="1"> <thead> <tr> <th>Site No.</th><th>Site type</th><th>NHRA category</th><th>Field rating</th><th>Impact rating: Before/After mitigation</th></tr> </thead> <tbody> <tr> <td>7.3.2</td><td>Graves, Cemeteries and Burial Grounds</td><td>Section 36</td><td>Generally protected 4A: High/medium significance</td><td>Medium (40) Low (14)</td></tr> </tbody> </table> <p><b>Mitigation:</b> (1) Avoidance/Preserve: A minimum buffer of 100m must be established around the burial site for the duration of the prospecting/mining phase.</p> <table border="1"> <thead> <tr> <th>Site No.</th><th>Site type</th><th>NHRA category</th><th>Field rating</th><th>Impact rating: Before/After mitigation</th></tr> </thead> <tbody> <tr> <td>7.3.3</td><td>Structures older than 60 years</td><td>Section 34</td><td>Generally protected 4B: Medium significance</td><td>Medium (40) Low (14)</td></tr> </tbody> </table> <p><b>Mitigation:</b> (2) Archaeological investigation: This option should be implemented when it is impossible to avoid impacting on an identified site or feature.</p>	Site No.	Site type	NHRA category	Field rating	Impact rating: Before/After mitigation	7.1.1	Archaeological resources	Section 35	Provincial/Grade 2: High significance	Medium (56) Low (14)	Site No.	Site type	NHRA category	Field rating	Impact rating: Before/After mitigation	7.3.1	Graves, Cemeteries and Burial Grounds	Section 36	Generally protected 4B: Medium significance	Medium (40) Low (14)	Site No.	Site type	NHRA category	Field rating	Impact rating: Before/After mitigation	7.3.2	Graves, Cemeteries and Burial Grounds	Section 36	Generally protected 4A: High/medium significance	Medium (40) Low (14)	Site No.	Site type	NHRA category	Field rating	Impact rating: Before/After mitigation	7.3.3	Structures older than 60 years	Section 34	Generally protected 4B: Medium significance	Medium (40) Low (14)		
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Waste Management		<p><b>Litter management</b></p> <ol style="list-style-type: none"> <li>1. Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction/prospecting site.</li> <li>2. The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at registered/licensed landfill.</li> <li>3. Good housekeeping practices should be implemented to regularly maintain the litter and rubble situation on the construction/prospecting site.</li> <li>4. If possible and feasible, all waste generated on site must be separated into glass, plastic, paper, metal and wood and recycled. An independent contractor can be appointed to conduct this recycling.</li> <li>5. Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor</li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.																																								

		<p>the neatness of the work sites as well as the Contractor campsite.</p> <ol style="list-style-type: none"> <li>6. Skip waste containers should be maintained on site. These should be kept covered and arrangements made for them to be collected regularly.</li> <li>7. All waste must be removed from the site and transported to a landfill site promptly to ensure that it does not attract vermin or produce odours.</li> <li>8. Where a registered waste site is not available close to the construction/prospecting site, the Contractor shall provide a method statement with regard to waste management.</li> <li>9. A certificate of disposal shall be obtained by the Contractor and kept on file, if relevant.</li> <li>10. Under no circumstances may solid waste be burnt on site.</li> <li>11. All waste must be removed promptly to ensure that it does not attract vermin or produce odours.</li> </ol> <p><b>Hazardous waste</b></p> <ol style="list-style-type: none"> <li>12. All waste hazardous materials must be carefully stored as advised by the ECO, and then disposed of offsite at a licensed landfill site, where practical. Incineration may be used where relevant.</li> <li>13. Contaminants to be stored safely to avoid spillage.</li> <li>14. Machinery must be properly maintained to keep oil leaks in check.</li> <li>15. All necessary precaution measures shall be taken to prevent soil or surface water pollution from hazardous materials used during construction/prospecting and any spills shall immediately be cleaned up and all affected areas rehabilitated.</li> </ol> <p><b>Sanitation</b></p> <ol style="list-style-type: none"> <li>16. The Contractor shall install mobile chemical toilets on the site.</li> <li>17. Staff shall be sensitised to the fact that they should use these facilities at all times. No indiscriminate sanitary activities on site shall be allowed.</li> <li>18. Toilets shall be serviced regularly and the ECO shall inspect toilets regularly.</li> </ol>		
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		<p>19. Toilets should be no closer than 50m or above the 1:100 year flood line from any natural or manmade water bodies or drainage lines or alternatively located in a place approved of by the Engineer.</p> <p>20. Under no circumstances may open areas, neighbours fences or the surrounding bush be used as a toilet facility.</p> <p>21. The construction of “Long Drop” toilets is forbidden, but rather toilets connected to the sewage treatment plant.</p> <p>22. Potable water must be provided for all construction staff.</p> <p><b>Remedial actions</b></p> <p>23. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site.</p> <p>24. Excavation of contaminated soil must involve careful removal of soil using appropriate tools/machinery to storage containers until treated or disposed of at a licensed hazardous landfill site.</p> <p>25. The ECO must determine the precise method of treatment for polluted soil. This could involve the application of soil absorbent materials as well as oil-digestive powders to the contaminated soil.</p> <p>26. If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent material.</p> <p>27. If necessary, oil absorbent sheets or pads must be attached to leaky machinery or infrastructure.</p> <p>28. Materials used for the remediation of petrochemical spills must be used according to product specifications and guidance for use.</p> <p>29. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment and stored in adequate containers until appropriate disposal.</p>		
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Water Use and Quality	Water pollution	<p><b>Water Use</b></p> <ol style="list-style-type: none"> <li>1. Develop a sustainable water supply management plan to minimise the impact to natural systems by managing water use, avoiding depletion of aquifers and minimising impacts to water users.</li> <li>2. Water must be reused, recycled or treated where possible.</li> </ol> <p><b>Water Quality</b></p> <ol style="list-style-type: none"> <li>3. The quality and quantity of effluent streams discharged to the environment including stormwater should be managed and treated to meet applicable effluent discharge guidelines.</li> <li>4. Discharge to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria outside a scientifically established mixing zone.</li> <li>5. Efficient oil and grease traps or sumps should be installed and maintained at refueling facilities, workshops, fuel storage depots, and containment areas and spill kits should be available with emergency response plans.</li> </ol> <p><b>Stormwater</b></p> <ol style="list-style-type: none"> <li>6. The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids and silt or chemical pollutants.</li> <li>7. Silt fences should be used to prevent any soil entering the stormwater drains.</li> <li>8. Temporary cut off drains and berms may be required to capture stormwater and promote infiltration.</li> <li>9. Promote a water saving mind set with construction/prospecting workers in order to Contractor ensure less water wastage.</li> <li>10. New stormwater construction must be developed strictly according to specifications from engineers in order to ensure efficiency.</li> <li>11. Hazardous substances must be stored at least 20m from any water bodies on site to avoid pollution.</li> <li>12. The installation of the stormwater system must take place as soon as possible to attenuate stormwater from the construction phase as well as the operation phase.</li> <li>13. Earth, stone and rubble is to be properly disposed of, or utilized on site so as not to obstruct natural water path ways</li> </ol>		
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		<p>over the site. i.e. these materials must not be placed in stormwater channels, drainage lines or rivers.</p> <p>14. There should be a periodic checking of the site's drainage system to ensure that the water flow is unobstructed.</p> <p>15. If a batching plant is necessary, run-off should be managed effectively to avoid contamination of other areas of the site. Untreated runoff from the batch plant must not be allowed to get into the storm water system or nearby streams, rivers or erosion channels or dongas.</p> <p><b>Groundwater resource protection</b></p> <p>16. Process solution storage ponds and other impoundments designed to hold non fresh water or un-treated process effluents should be lined and be equipped with sufficient wells to enable monitoring of water levels and quality.</p> <p>17. Prevent dirty water runoff from leaving the general mining area;</p> <p>18. Compact the base of dirty areas, like the workshops and oil and diesel storage areas to minimise infiltration of poor-quality water to the underlying aquifers;</p> <p>19. Enough supply of absorbent fibre should be kept at the site to contain accidental spills;</p> <p>20. Contain dirty water in return water dams and re-use dirty water for dust suppression and make up water in the plant;</p> <p>21. Proper storm water management should be implemented. Berms should also be constructed to ensure separation of clean water and dirty water areas;</p> <p>22. A detailed mine closure plan should be prepared during the operational phase, including a risk assessment, water resource impact prediction etc. as stipulated in the DWS Best Practice Guidelines. The implementation of the mine closure plan, and the application for the closure certificate can be conducted during the decommissioned phase</p>		
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	<p><b>Sanitation</b></p> <p>23. Adequate sanitary facilities and ablutions must be provided for construction workers (1 toilet per every 15 workers).</p> <p>24. The facilities must be regularly serviced to reduce the risk of surface or groundwater pollution.</p> <p><b>Concrete mixing</b></p> <p>25. Concrete contaminated water must not enter soil or any natural drainage system as this disturbs the natural acidity of the soil and affects plant growth.</p> <p><b>Public areas</b></p> <p>26. Food preparation areas should be provided with adequate washing facilities and food refuse should be stored in sealed refuse bins which should be removed from site on a regular basis.</p> <p>27. The Contractor should take steps to ensure that littering by construction workers does not occur and persons should be employed on site to collect litter from the site and immediate surroundings, including litter accumulating at fence lines.</p> <p>28. No washing or servicing of vehicles on site.</p> <p><b>Infrastructure</b></p> <p>29. Infrastructure should adhere to the GN704 of the South African National Water Act (36 of 1998) and not be located within the 1:100- year Return Period flood line. This is essential for the safety of human life as well as for the</p>										

		protection of infrastructure from flood inundation and destruction.		
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**Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including**

**G. MONITORING OF IMPACT MANAGEMENT ACTIONS**

**H. MONITORING AND REPORTING FREQUENCY**

**I. RESPONSIBLE PERSONS**

**J. TIME PERIOD FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS**

**K. MECHANISM FOR MONITORING COMPLIANCE**

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

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

**L. A PROGRAM FOR REPORTING ON COMPLIANCE, TAKING INTO ACCOUNT THE REQUIREMENTS AS BY THE REGULATIONS;**

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

**M. AN ENVIRONMENTAL AWARENESS PLAN DESCRIBING THE MANNER IN WHICH—**

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

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

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

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

See the attached **Appendix 13** for the Awareness plan

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

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

**N. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY  
(Among others, Confirm that the financial provision will be reviewed annually).**

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

\*\*\*\*\*END OF THE REPORT\*\*\*\*\*