



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: JUBACEL (PTY) LTD

REFERENCE NUMBER: (NC) 30/5/1/1/2/ 11464 PR

ENVIRONMENTAL MANAGEMENT PLAN

**SUBMITTED
IN TERMS OF SECTION 39 AND OF REGULATION 52
OF THE MINERAL AND PETROLEUM RESOURCES
DEVELOPMENT ACT, 2002,
(ACT NO. 28 OF 2002) (the Act)**

STANDARD DIRECTIVE

Applicants for prospecting rights or mining permits, are herewith, in terms of the provisions of Section 29 (a) and in terms of section 39 (5) of the Mineral and Petroleum Resources Development Act, directed to submit an Environmental Management Plan strictly in accordance with the subject headings herein, and to compile the content according to all the sub items to the said subject headings referred to in the guideline published on the Departments website, within 60 days of notification by the Regional Manager of the acceptance of such application. This document comprises the standard format provided by the Department in terms of Regulation 52 (2), and the standard environmental management plan which was in use prior to the year 2011, will no longer be accepted.

IDENTIFICATION OF THE APPLICATION IN RESPECT OF WHICH THE ENVIRONMENTAL MANAGEMENT PLAN IS SUBMITTED.

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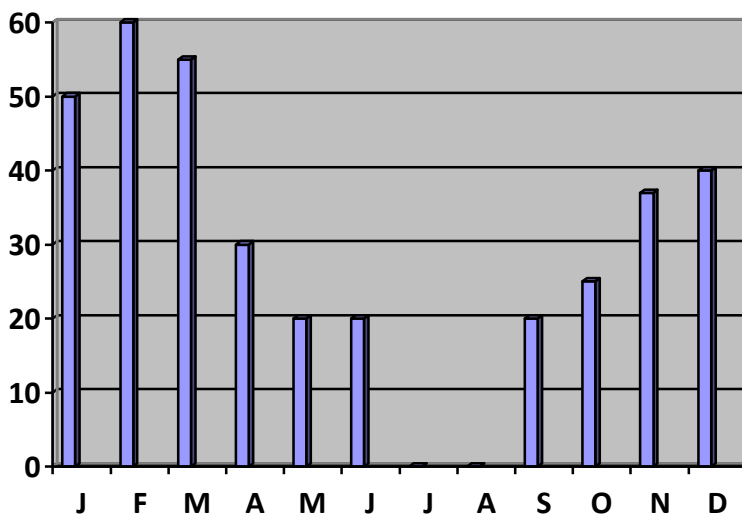
1 REGULATION 52 (2): Description of the environment likely to be affected by the proposed prospecting or mining operation

1.1 The environment on site relative to the environment in the surrounding area.

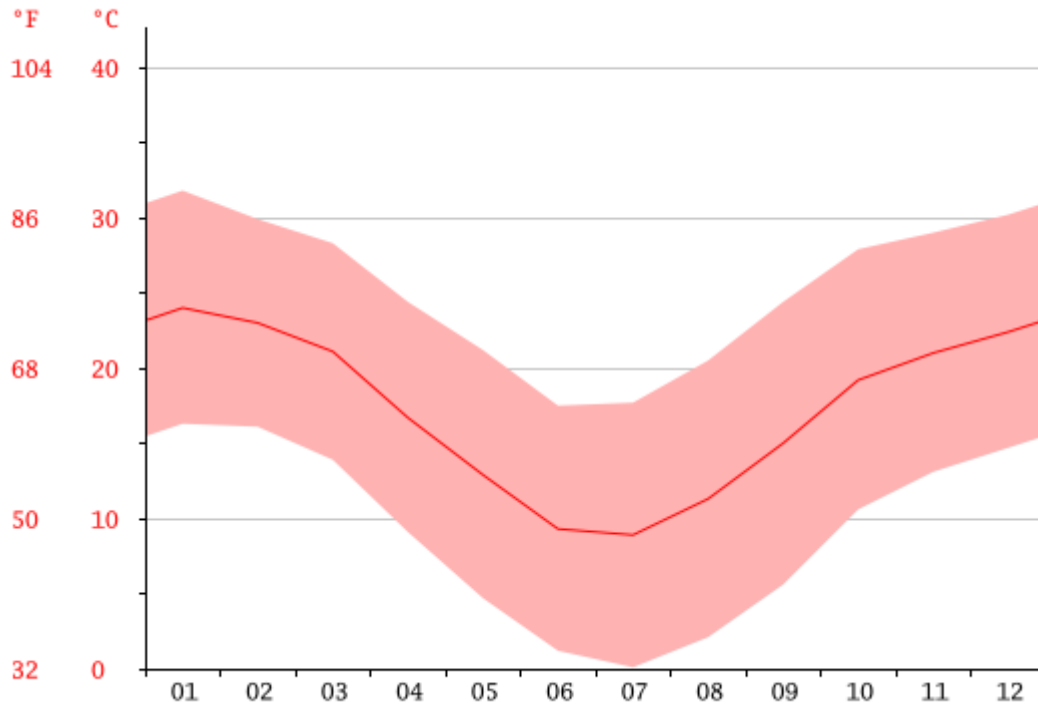
The area under the prospecting right application is on The Farm Machorogan no.106 and farm no.86, situated in the Magisterial District of Barkly West: Northern Cape Region, under the jurisdiction of Dikgatlong local Municipality. The proposed prospecting area is situated approximately 35 km from the town Barkly West. Barkly West town is situated approximately 37 km from the city Kimberley. The proposed application area is also not far from Spitskop dam and it lies 46km to the west of town of Warrenton. The Harts River crosses some of the portions of Machorogan Farm on the South East. The secondary road R370 passes the application area. Eskom "ULCOGANSPAN 1" 132 KV Power line crosses the application area on the western side of the area. The total area under application is 9234.02 hectares

Climate

Barkly West normally receives about 274mm of rain per year, with most rainfall occurring mainly during summer. Barkly West receives the lowest rainfall (0mm) in July and the highest (60mm) in February. Frost occurs frequently to very frequently during the dry winter months. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Barkly West range from 18°C in June to 32°C in January. The region is the coldest during July when the mercury drops to 1°C on average during the night.



TEMPERATURE GRAPH



The warmest month of the year is January with an average temperature of 32.0 °C. In July, the average temperature is 8.9 °C. It is the lowest average temperature of the whole year.

CLIMATE TABLE

month	1	2	3	4	5	6	7	8	9	10	11	12
mm	69	70	69	42	16	6	7	9	14	39	51	58
°C	24.0	23.0	21.1	16.7	12.9	9.3	8.9	11.3	15.0	19.2	21.0	22.4
°C (min)	16.3	16.1	13.9	9.1	4.7	1.2	0.1	2.1	5.6	10.6	13.1	14.7
°C (max)	31.8	29.9	28.3	24.4	21.2	17.5	17.7	20.5	24.4	27.9	29.0	30.2
°F	75.2	73.4	70.0	62.1	55.2	48.7	48.0	52.3	59.0	66.6	69.8	72.3
°F (min)	61.3	61.0	57.0	48.4	40.5	34.2	32.2	35.8	42.1	51.1	55.6	58.5
°F (max)	89.2	85.8	82.9	75.9	70.2	63.5	63.9	68.9	75.9	82.2	84.2	86.4

The difference in precipitation between the driest month and the wettest month is 64 mm. The average temperatures vary during the year by 15.1 °C.

Fauna:

During the site visits mammals, birds, reptiles, and amphibians were identified by visual sightings through random transect walks. In addition, mammals were also recognized as present by means of spoor, droppings, burrows or roosting sites. It was also observed that the farms are used for livestock farming such as cattle farming.

Flora:

Most of the site is characterized by mixed woodland or shrubveld that varies in density and species composition, while a tributary of the Harts River bisect the south-western section of the site. Vegetation: the area is characterised by few tall trees, shrubs and grasses. The current vegetation at the proposed site of development consists mainly of shrub land with a well-developed grass layer. No red data plant species were found on the site due to the state of the vegetation and physical environment of the larger area mostly not being suitable for any of the red data plant species that may be found in the area. The disturbance of vegetation in the area won't be significant since the company will avoid unnecessary removal of vegetation by using existing tracks.

The following is normally found under the prospecting area.

Tall Tree: *Acacia erioloba* **Small Trees:** *Acacia karroo* (d), *A. mellifera* subsp. *detinens* (d), *A. tortilis* subsp. *heteracantha* (d), *Rhus lancea*.

Tall Shrubs: *Tarchonanthus camphoratus* (d), *Diospyros pallens*, *Ehretia rigida* subsp. *rigida*, *Euclea crispa* subsp. *ovata*, *Grewia flava*, *Lycium arenicola*, *L. hirsutum*, *Rhus tridactyla*. **Dense Acacia mellifera – Grewiaflava – Tarchonanthus camphorates shrubveld; Searsia lancea – Olea europaea riparian woodland;**

Low Shrubs: *Acacia hebeclada* subsp. *hebeclada* (d), *Anthospermum rigidum* subsp. *pumilum*, *Helichrysum zeyheri*, *Hermannia comosa*, *Lycium pilifolium*, *Melolobium microphyllum*, *Pavonia burchellii*, *Peliostomum leucorrhizum*, *Pinthus sericeus*, *Wahlenbergia nodosa*

Succulent Shrubs: *Aloe hereroensis* var. *hereroensis*, *Lycium cinereum*
Graminoids: *Eragrostis lehmanniana* (d), *Aristida canescens*, *A. congesta*, *A. mollissima* subsp. *argentea*, *Cymbopogon pospischilii*, *Digitaria argyrograpta*, *eriantha* subsp. *eriantha*, *Enneapogon cenchroides*, *E. scoparius*, *Eragrostis rigidior*, *Heteropogon contortus*, *Themeda triadra*

Herbs: *Barleria mactrostegia*, *Dicoma schinzii*, *Harpagophytum procumbens* subsp. *procumbens*, *Helichrysum ceratioides*, *Hermbstaedtia odorata*, *Hibiscus marlothianus*, *Jamesbrittenia aurantiaca*, *Lippia scaberrima*, *Osteospermum muricatum*, *Vahlia capensis* subsp. *vulgaris* **Succulent Herbs:** *Aloe grandidentata*, *Piarranthus decipiens*.

Geology:

Regional Geology

The study area is found within the known cretaceous diamondiferous kimberlites and alluvial diamond field. Following the Gondwana break-down erosion occurred over a period of more than 100 million years in temperate and wet climatic conditions, resulting in significant thickness of the upper Karoo rocks covering the Carcogian basement land that separated the Kalahari basin from the Karoo during the Cretaceous. This led to the formation of two prominent drainage systems namely the northern Kalahari River which corresponds to the modern day Molopo River and a southern Karoo River with headwaters in the upper Vaal and Orange Rivers. The intense and rapid erosion and weathering of the Karoo resulted in the formation of the trap sites for alluvial diamond. The erosion in the north westerly direction included the dispersal of the cretaceous kimberlite pipes through the palaeo-Molopo drainage system, leading to the distribution of the majority of inland alluvial diamond deposits in the north and northwest of the major diamondiferous Cretaceous Kimberlite pipes in the Northern Cape and Free State (Stratten, 1979; Marshall, 1986; De Wit, 1996; Moore & Moore, 2004).

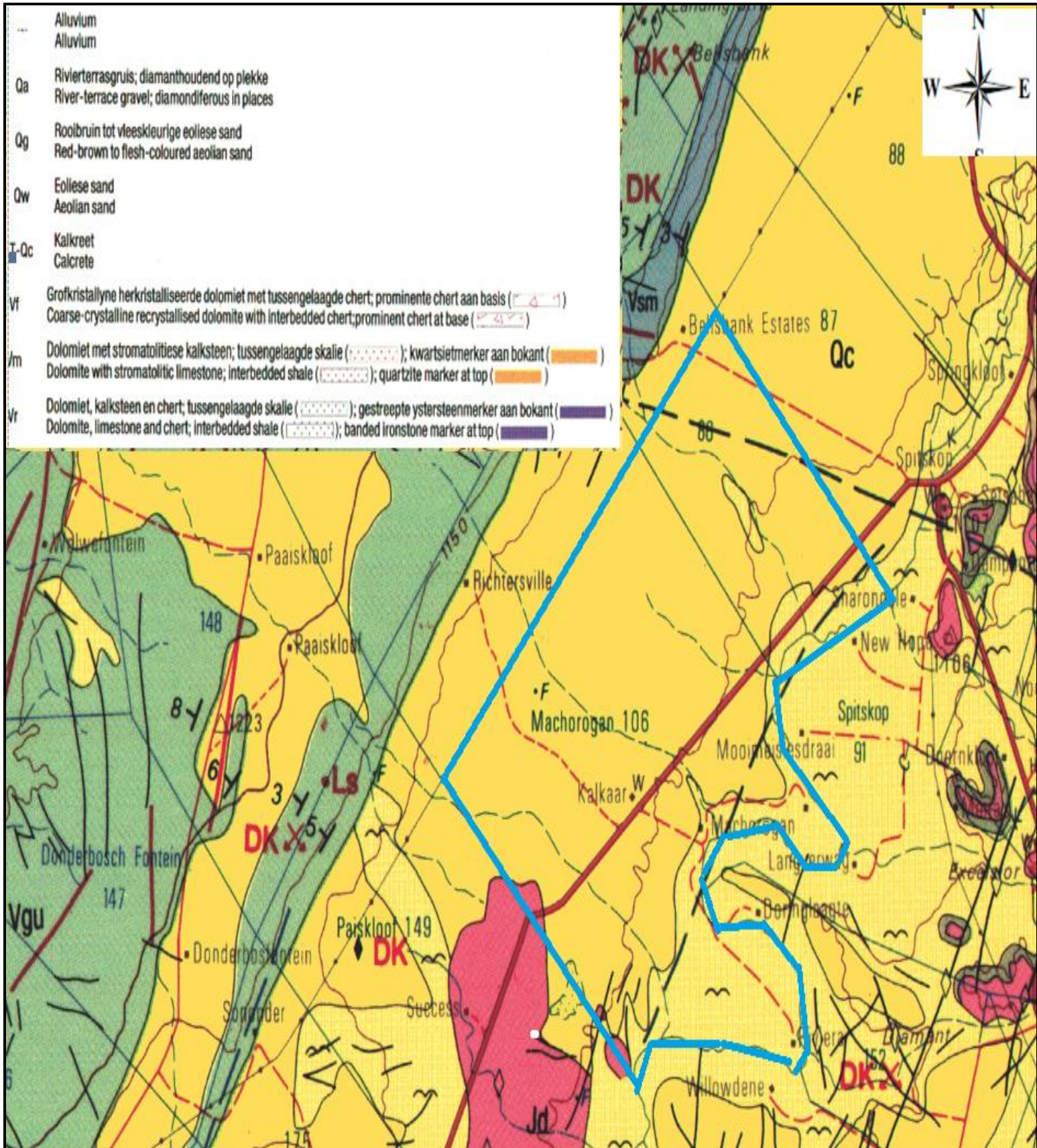
Further work looking at the distribution of the cretaceous kimberlite diamonds and using various exploration techniques is needed to characterize and discern the occurrences of diamonds in the study area.

Local Geology and Historic Information

The area lies on the Kaapvaal craton, on the Eastern edge of the Griqualand West basin, and consists of dolomite, limestone and chert of the Reivilo formation (2567Ma). These shallow water carbonate deposits form the lower section of the Campbellrand Subgroup of the Ghaap Group, and are overlain by recent cover of calcrete and sand. Ghaap Group sediments are known to be underlain by lithologies of the Ventersdorp Supergroup.

Historically, several occurrences are known in the area, and number of these have been exploited for diamonds in the past (e.g. the Bobbejaan and Bellsbank fissures on the edge of the Ghaap Plateau).

REGIONAL GEOLOGICAL MAP



TOPOGRAPHY:

The proposed development is planned on a landscape that varies from flat to slightly undulating plains.

Soil:

The soils of the application area were classified according to the dominant soil form and family as follows:

- Shallow, calcareous soils of the Glenrosa or Mispah soil form;
- Shallow calcareous soils of the Augrabies / Glenrosa soil form (sodic areas);
- Alluvial soils (Oakleaf soil form) associated with drainage channels;
- Shallow red-yellow apedal soils of the Hutton soil form;
- Shallow rocky soils of the Mispah soil form associated with the rocky ridge.

According to the Agricultural Report, the property can be classified as having low potential arable soils due to the shallow nature of the soil (clay content varies between 5 and 15% with depth less than 300 mm) and arid climate making the potential to cultivate crops under arable conditions basically impossible, especially considering that the shallow soils would not allow ploughing of the topsoil. Therefore, the site should be classified as not suitable for arable agriculture due to its physical characteristics.

SOCIO-ECONOMIC ENVIRONMENT:

The study area is located within the Dikgatlong Local Municipality is located within the Francisbaart District Municipality. Dikgatlong Local Municipality was established in 2000 through the Local Government Demarcation process, whereby the towns of Barkly West, Delpoortshoop and Windsorton were amalgamated into one municipality. The name Dikgatlong is derived from a Setswana word meaning 'confluence', as it refers to the place where the Harts and Vaal Rivers flow into each other at Delpoortshoop. Dikgatlong is one of four local municipalities within the jurisdiction area of the Frances Baard District Municipality. Frances Baard is one of five district municipalities within the boundaries of the Northern Cape Province. The municipality lies on the northern bank of the Vaal River, 37km from the city of Kimberley, which is south-east from Dikgatlong.

Cities/Towns: Barkly West, Delpoortshoop, Windsorton.

Main Economic Sectors: Agriculture (22%), mining (7%), manufacturing (7%)

Population	46 841
Age Structure	
Population under 15	31.60%

Population 15 to 64	63.10%
Population over 65	5.30%
Dependency Ratio	
Per 100 (15-64)	58.50
Sex Ratio	
Males per 100 females	97.00
Population Growth	
Per annum	2.02%
Labour Market	
Unemployment rate (official)	39.70%
Youth unemployment rate (official) 15-34	49.00%
Education (aged 20 +)	
No schooling	17.70%
Higher education	2.70%
Matric	20.30%
Household Dynamics	
Households	11 967
Average household size	3.70
Female headed households	35.40%
Formal dwellings	78.50%
Housing owned	47.10%
Household Services	
Flush toilet connected to sewerage	60.00%
Weekly refuse removal	49.60%
Piped water inside dwelling	30.70%
Electricity for lighting	75.90%

Source: Census 2011 Municipal Fact Sheet, published by Statistics South Africa.

According to Census 2011, Dikgatlong Local Municipality has a population of 46 841, of whom 58,5% are black African, 28,5% are coloured, 3,6% are white, with other population groups making up the remaining 9,4%. Setswana is the most widely spoken language (24 549 people), followed by Afrikaans (18 250 people). There are 97 males for every 100 females. 63,1% of the population is aged between 15 and 64 years, while 31,7% of the population is younger than 15 years. In 2011, 20,3% of the population aged 20 years and older had attained matric.

Livestock, irrigation farming and commercial mining drive the municipality's economy. The unemployment rate in Dikgatlong is 39,7%, with the youth unemployment rate standing at 49,0%. The main contributing factor to the low levels of employment in Dikgatlong is the high percentage (86,2%) of the labour force that has not obtained a Grade 12 Senior Certificate and/or higher qualification, resulting in a primarily unskilled labour force.

According to Census 2011, Dikgatlong Local Municipality has a total of 11 967 households with an average size of 3,9 persons per household. Households headed by females represent 35,4% of the population. 48% of the population in the district has no income.

Dikgatlong Local Municipality has only 47,1% of residents who own their housing, which is the lowest compared to other local municipalities in the district. In addition, 78,5% of the dwellings are formal dwellings, and 60,0% of these have a flush toilet connected to a sewerage system. 75,9% of the households use electricity for lighting and 30,7% have piped water inside their dwelling, which is also a lower percentage than those of the other local municipalities in the district. The dependency ratio is 58,5.

Water/ hydrology of the area:

A borehole equipped with a mono-pump and a second borehole close by (10 m away) equipped with a windpump are located on Portion 4 of the Farm Machorogan 106. The harts river bisect the application area. The site is located within the C33C Quaternary Catchment, where 75 m³/ha/annum of ground water abstraction is allowed for under the DWA General Authorization. The proposed development site falls within the Lower Vaal Water Management Area.

According to the geo-hydrological study conducted in 2013 by Ages Pty Ltd, the annual precipitation is 397 mm per annum, with an annual run-off of 6 mm. The groundwater recharge is 12.08 mm per year and the groundwater level of the area is 15 m below surface. The Eco status is category C. The total groundwater use in the quaternary is 1.02 Mm³ per year. The estimated annual groundwater recharge (12.08 mm/m² per annum) from an average annual precipitation of 397 mm falling on the property (857 ha) will result in 103,525 m³ of water available.

Cultural and Heritage Resources

There are no known areas with a heritage resource on the proposed area under application. South African Heritage Resource Agency (SAHRA) will be consulted in order to find out if it is necessary to conduct Phase 1 of Heritage Impact assessment. If there is a need to conduct the above mentioned study, Phase 1 of Heritage Impact Assessment will be conducted before prospecting activities take place to determine if there are historical sites within the prospecting area that need protection. Therefore, there won't be any impact on the heritage sites since the location of the heritage site will be avoided and no prospecting will be done 100m from any heritage resources. If any heritage resource is identified, that area will be fenced-off. Full Heritage Impact Assessment, inclusive of an Archaeological and Paleontological Impact Assessment, will be conducted prior to any bulk sampling related activities occurring within the proposed application area.

1.2 The specific environmental features on the site applied for which may require protection, remediation, management or avoidance.

Soil: topsoil will be stripped and stored separately from the overburden on the high ground side of the mining area away from flood plain. The topsoil stockpile will be less than 2m in height to avoid erosion. Any contaminated soil will be treated by use of bio-sorb or oil cap and returned to its original area after being treated and tested to be oil free. Stored topsoil will be spread on top of rehabilitated area in order to promote vegetation growth.

Vegetation: Jubacel (Pty) Ltd will avoid unnecessary clearance of vegetation within the prospecting areas. Existing roads will be utilised to access the prospecting area in order to avoid/minimise vegetation and surface disturbances.

Geology: the area will be rehabilitated to its original state and the overburden will be disposed within the excavation following their sequence.

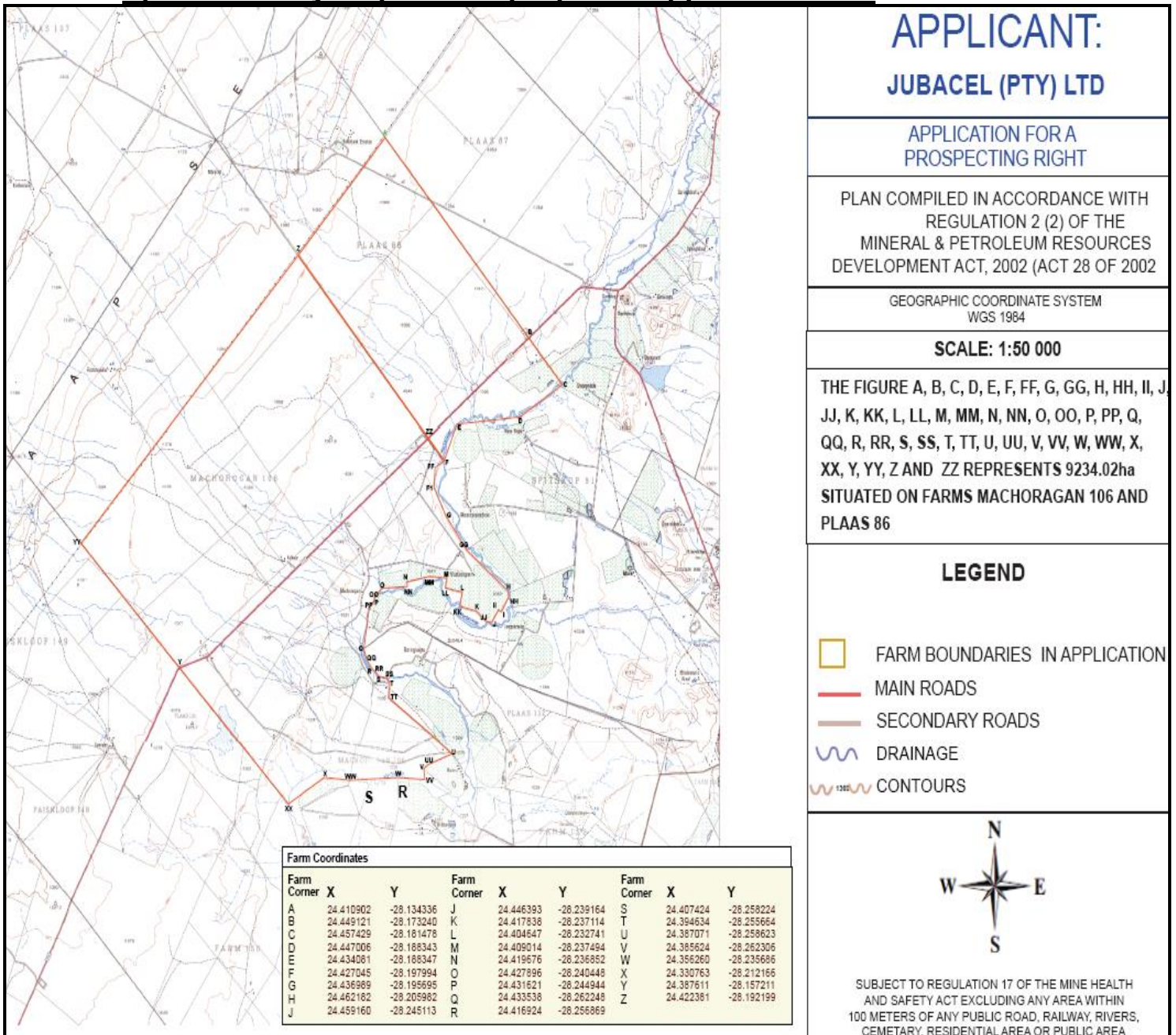
River or water resource:

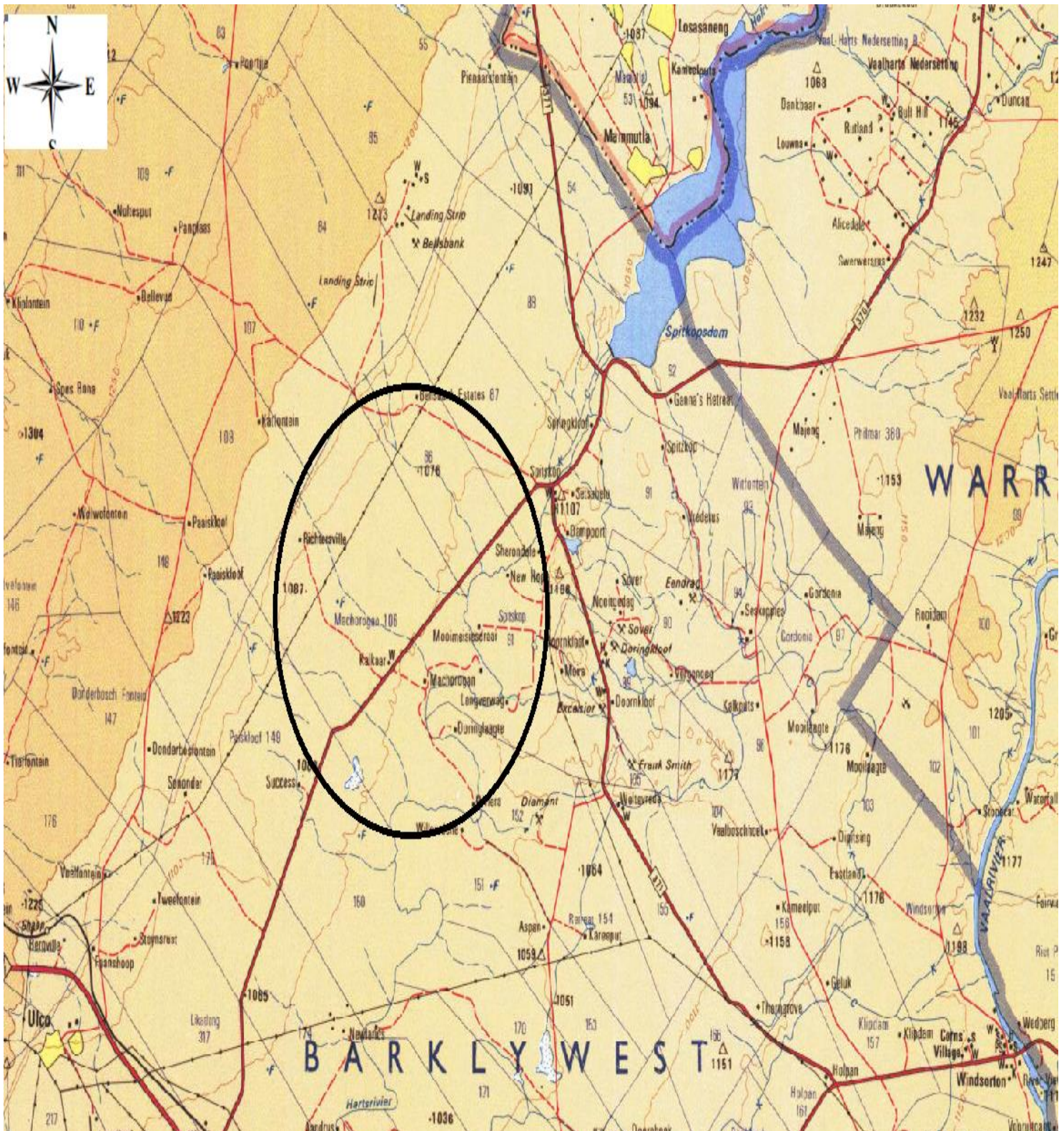
No drilling or bulk sampling will be done within 100m from Harts River or any water resources without authorisation from Department of Water and Sanitation. Jubacel is not planning to drill or bulk sample next to any water resource or wetland.

Eskom power line: No drilling or bulk sampling will be done within 100m from the power line. The conditions stipulated on the response letter from Eskom will be adhered to at all times.

1.3 Map showing the spatial locality of all environmental, cultural/heritage and current land use features identified on site.

Spatial locality maps of the proposed application area





1.4 Confirmation that the description of the environment has been compiled with the participation of the community, the landowner and interested and affected parties,

Landowners and affected parties have been consulted in relation to the proposed prospecting activity and engagement is ongoing (refer to the proof of consultation attached). The EMP, PWP and background information have been provide to the land owners and affected parties in order to comment or to provide suggestions.

2 REGULATION 52 (2) (b): Assessment of the potential impacts of the proposed prospecting or mining operation on the environment, socio-economic conditions and cultural heritage.

2.1 Description of the proposed prospecting or mining operation.

2.1.1 The main prospecting activities (e.g. access roads, topsoil storage sites and any other basic prospecting design features)

Access Roads

Existing access roads will be utilised, therefore no new haul roads will be constructed in order to access the prospecting area. Small tracks measuring approximately 400m and 4m wide may be formed in order to access the foot print of the trenches or borehole and they will be ripped in order to allow vegetation restoration. Farm owners will be consulted if there is a need to construct the above mentioned access roads.

Topsoil storage

In all areas where physical disturbances will occur, topsoil will be stripped and stored separately from the overburden on the high ground side of the prospecting area away from flood plain. The topsoil stockpile will be less than 2m in height to avoid erosion. The stockpiles storage will cover the area of 20mx10mx2m.

Mobile Chemical toilets

There will be two mobile chemical toilet measuring 2mx2m to the height of 3m provided on sites. The toilets will be serviced and emptied by qualified contractor on regular basis. They will also be monitored at all times for hygiene purposes.

Storage Site

Hydrocarbon such as diesel or oil will be stored in the mobile tanks which will be brought to the site on a daily basis. Drip trays will be placed under mobile tank in order to avoid accidental spillages and precautions will be taken on the refuelling point. Lockable storage containers (10mx5m) will be used to store any chemicals that will be utilized during the prospecting period.

Water

Water will be obtained from one borehole which will be drilled on site. The water required will be for mixing with the Kimberlite in order to create a slimes media which enables the recovery of diamonds and heavy minerals. The plant has a closed density media circuit, wherein a cyclone is utilised to dewater the slimes and tailings so as to minimize the loss of water.

Furthermore; the final recovery section, comprising the concentrate treatment scrubber, de-sliming screen, classifier and Grease tables, are as well in a closed circuit, any water being discarded here, is routed to the Pan plant slimes circuit. These actions ensure that every drop of water is accounted for and losses are minimized. Relevant water use authorization will be obtained from the Department of Water and Sanitation. Mobile water tanker will be used. Portable water will be purchased for drinking purpose.

Processing area

This area will be occupied by a 10ft processing plant for the processing of Diamonds Processing area will be demarcated and the dimension will be 30mx20m. Gravel will be excavated using excavator, transported from two proposed trenches to the processing plant by dump trucks, wherein it will be crushed and screened and the final product will be taken for diamonds recovery.

Mini Slime Dam

One mini slimes dam will be constructed measuring 10mx10m to a depth of 5m and walls will be constructed around the slimes dam to a height of 4m. Slimes dam will be divided into two in order to avoid overflow.

Mobile Office

1 Mobile Office measuring 10mx5m will be utilized on site therefore no construction of concrete building will be done on site.

Fence

Fence will only be erected around the foot print of the proposed prospecting areas and around the processing area.

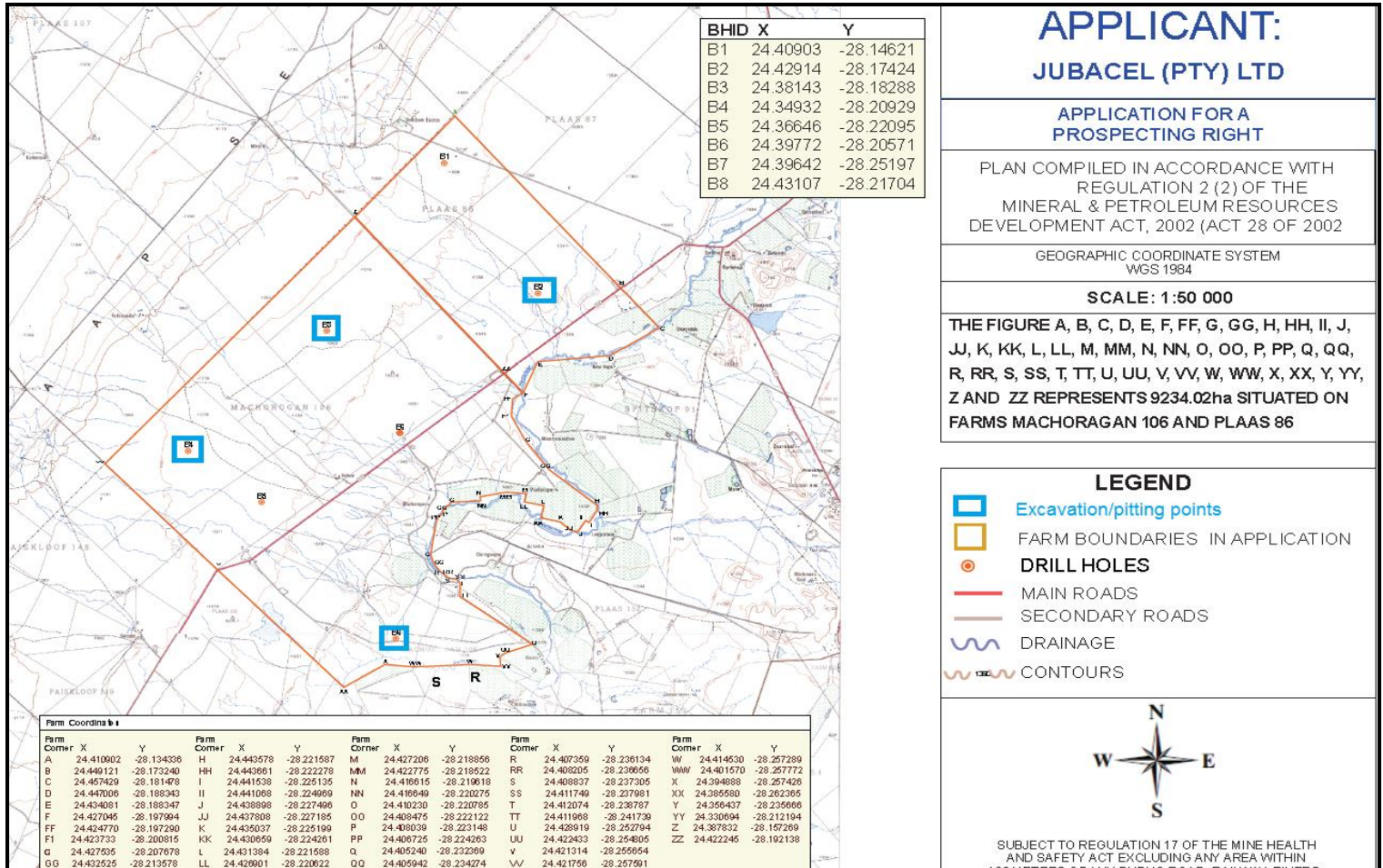
Equipment to be used during the mining activities includes:

- 1 X Drill Rig
- 1 X Excavator
- 1 X Front-End-Loaders
- 1x 10ft rotatory pan
- 1 X Dump Truck
- 1X TLB
- 1X Grader
- 1 X Generator and other tools
- Vehicles and diesel trailers

2.1.2 Plan of the main prospecting activities with dimensions

Main prospecting activities will be conducted in such a way that minimal environmental damage is ensured. This will be achieved by practising concurrent rehabilitation throughout the prospecting activities and also by managing the environmental impacts.

Plan of the main prospecting activities



The planned prospecting operation will create the following:

1. **Boreholes:** The total of 7 boreholes will be drilled using reverse or percussion circulation methods and the area of disturbance will be 10mx10m for each borehole site. Drilling program will be put into practice where the grid spacing will be set to 400m x 400m with an average depth of 50 m. This phase of drilling is anticipated to last for 6 months (months 8-13). To achieve this, the drill rod of the percussion drill will be replaced by a drill stem of concentric pipes which allow the compressed air or water to be forced down an inner pipe, exiting near the centre of the drill bit, flushing the drill cuttings up the side of the bit assembly and into slots in the drill stem above the bit.

The cuttings are then forced up the space between the inner drill rod and the outer drill pipe. At the surface the rapidly moving rock cuttings and drill fluid are passed through a cyclone, which vents most of the compressed air and drops the drill cuttings through a splitter, which collects a present fraction of the cuttings as a sample for assay. **Concurrent rehabilitation will be implemented throughout the prospecting operation, meaning that each borehole will be rehabilitated before moving to the next area to be drilled.**

2. Pitting /trenching method

Trenches: four trenches will be excavated using excavator to the dimension of 30mx15mx20m. The total volume of 2250m³ of ore will be extracted and 6750 m³ of overburden waste will be generated from on each trench. Trenches to be excavated will disturb a total area of to be 1800m², or 0.18 ha. Trenching will be conducted during 19-22 months. Gravel will be excavated using excavator and the gravel material will be transported to the processing plant for diamond recovery. When the excavation is fully mined overburden will be deposited back to the trenches following their sequence. Puddles from the slimes dam will be spread then stored topsoil will be also spread on top of rehabilitated area in order to promote vegetation growth or plant succession. One trench will be opened at a time and rehabilitated before moving to the next area to be excavated in order to reduce environmental disturbances and also risk to human and wild life.

2.1.3 Description of construction, operational, and decommissioning phases.

Construction phase:

The prospecting site will be established during this phase whereby the dedicated areas will be demarcated. Equipment and mobile structures will be transported to the site. This phase will take a period of one month. It is during this period where topsoil will be stripped from all areas that are going to be disturbed. The area to be first prospected will be fenced off. During this phase consultation is required with the surface owners on the construction of temporary roads if there is a need during the construction phase, as well as the routes to be used by prospecting vehicles and machinery.

Operational phase:

The operational phase will consist of non-invasive and invasive prospecting. The below table shows the activities to be conducted and their time frame:

Phase	Activity (what are the activities that are planned to achieve optimal prospecting)	Skill(s) required (refers to the competent personnel that will be employed to achieve the required results)	Timeframe (in months) for the activity)	Outcome (What is the expected deliverable, e.g. Geological report, analytical results, feasibility study, etc.)	Timeframe for outcome (deadline for the expected outcome to be delivered)	What technical expert will sign off on the outcome? (e.g. geologist, mining engineer, surveyor, economist, etc)
1	Non-invasive: Desktop Study including a Literature Survey, Aerial Photograph and Satellite Interpretation	Geologist	Month 1-3	Geological maps/plans of the property.	Month 3	Geologist
	Geological mapping	Geologist	Month 4-7	Detailed progress report.	Month 7	Geologist
2	Invasive: 7 Boreholes	Geologist Qualified exploration drilling contractors	Month 8-13	Detailed Geological and Grade Resource Models, Mineral Resource Estimates to Indicated level of confidence	Month 13	Geologist
	Excavations/Pitting	Geologist & Metallurgist Qualified contractors Geologist	Month 14-18	Preliminary Geological Assessment Report and Conceptual Geological Model (Including indicative grade estimates).	Month 18	Geologist, Operations Manager
3	Invasive: 4 Bulk Sampling	Geologist & Metallurgist Qualified contractors	Month 19-22	Metallurgical testing and ensure the economic viability of the resource defined in phase 2 above	Month 22	Geologist
4	Non-invasive: Analytical Desktop studies/ including decision Making	Multi-disciplinary team of consultants	Month 23-24	Feasibility Study report and final report	Month 24	Competent Person's Report (CPR)

NON-INVASIVE PROSPECTING

PHASE 1 (Month 1-3)

The non-invasive prospecting work will take approximately six months and will compile the relevant data and observations from the recent and historical work done on site. The deliverables will be a detailed report and maps highlighting areas with the best potential to contain Kimberlite.

Once this information has been assessed in detail, it will be used to further develop and refine the ongoing prospecting activities. Aerial photographs and a high resolution satellite image will be acquired for the prospecting right application so that a target identification process using both desktop study and geological mapping. Both desktop study and geological mapping interpretations will be used to focus future prospecting activities.

After the Desktop Study, a site geological mapping will be undertaken. The aim is to visit all the targets with Kimberlite outcrop identified in the Desktop Study to make sure that they are not cultural features. Planning for the drilling survey will occur at the same time.

Invasive prospecting

Drilling method: The prospecting drilling campaign will be aimed at defining the extent of mineralisation and will demonstrate geological continuity of the mineralized zone across the entire area under investigation (application area). Numerous samples will be collected and tested in a registered laboratory.

Boreholes: The total of 7 boreholes will be drilled using reverse or percussion circulation methods and the area of disturbance will be 10mx10m for each borehole site. Drilling program will be put into practice where the grid spacing will be set to 400m x 400m with an average depth of 50 m. This phase of drilling is anticipated to last for 6 months (months 8-13). The total footprint of all 7 boreholes to be drilled is therefore anticipated to be 700m², or 0.07 ha. Results from this phase will be used to inform the plan and schedule of the subsequent drilling campaign. During this drilling programme samples are collected on every meter and logging will be done by a qualified geologist who will record the lithology. Apart from ore resources calculations the drilling information will be used to construct ore thickness, overburden thickness and basement elevation contour plans. **Concurrent rehabilitation will be implemented throughout the prospecting operation, meaning that each borehole will be rehabilitated before moving to the next area to be drilled.**

Trenches: Trenches: four trenches will be excavated using excavator to the dimension of 30mx15mx20m. The total volume of 2250m³ of ore will be extracted and 6750 m³ of overburden waste will be generated from on each trench. Trenches to be excavated will disturb a total area of to be 1800m², or 0.18 ha. Trenching will be conducted during 19-22 months. Gravel will be excavated using excavator and the gravel material will be transported to the processing plant for diamond recovery. When the excavation is fully mined overburden will be deposited back to the trenches following their sequence. Puddles from the slimes dam will be spread then stored topsoil will be also spread on top of rehabilitated area in order to promote vegetation growth or plant succession. One trench will be opened at a time and rehabilitated before moving to the next area to be excavated in order to reduce environmental disturbances and also risk to human and wild life.

Non-invasive prospecting: (Analytical Desktop Study)

During this phase the project geologist will monitor the programme, consolidates and processes the data and amends the programme depending on the results. This is a continuous process throughout the programme and continues even when no prospecting is done on the ground. Each physical phase of prospecting is followed by desktop studies involving interpretation and modelling of all data gathered. These studies will determine the manner in which the work programme is to proceed in terms of activity, quantity, resources, expenditure and duration. A GIS based database will be constructed capturing all exploration data.

Decommissioning phase:

The decommissioning phase will only commence once all prospected areas are rehabilitated. Industrial and domestic waste will be removed from the site to the registered licenced facility. During this phase all prospecting related infrastructure and equipment will be removed from the site and final rehabilitation of the disturbed areas will take place. All compacted area will be ripped to a depth of 300mm in order to allow vegetation to grow. Monitoring will take place to see if re-growth is taking place naturally. If re-vegetation does not take place naturally therefore seeding of the prospecting area with surrounding indigenous species will be considered. No excavation, boreholes or waste deposits will be left un-rehabilitated.

2.1.3 Listed activities (in terms of the NEMA EIA regulations)

According to Listing Notice 1: List of activities and competent authorities identified in terms of Sections 24(2) and 24D of the National Environmental Management Act, 1998 (Act no. 107 of 1998) of Government Gazette no 33306, No. R. 544 the following activity is applicable according to NEMA EIA regulations: The proposed prospecting activities triggers (Activity 19- Any activity requiring a prospecting right or renewal thereof in terms of Section 16 and 18 respectively of the Mineral and Petroleum Resources Development Act, 2002 (Act no 28 of 2002).

2.2 Identification of potential impacts (Refer to the guideline)

2.2.1. Potential impacts per activity and listed activities.

Phases	Prospecting Activity	Potential impact	Description of the impact before mitigation.
Construction phase	Site establishment	Surface disturbances	Surface will be disturbed as a result of topsoil that will be stripped during this phase. Ground will also be compacted by the movement of vehicles within the prospecting area.
		Air pollution	Movement of trackless mobile machinery e.g. excavator, front-end loader and a truck to the site. Dust will be generated during the stripping of soil.
		Noise pollution	Noise will be generated from the prospecting equipment.
		Soil pollution	Contamination of soil may occur from accidental spillages from the machineries brought to the site.
		Vegetation loss	Some of the vegetation will be disturbed on areas that topsoil will be removed. In all areas where site is going to be established vegetation will be disturbed.
		Fauna disturbances	Animals within the prospecting area will move to other location because of the disturbances if precaution is not followed.

Operational phase		Loss of authentic value	The natural environment of the area will be disturbed.
		Topography	The natural slope of the area will be disturbed.
	Drilling	Surface disturbance	The ground will be compacted and also be disturbed because of drilling activities.
		Air pollution	Dust will be generated from the drilling of boreholes. Air pollution caused by carbon and hydrocarbons from vehicles and generator using combustion of fuels.
		Noise pollution	Noise impact from the prospecting equipment will be created.
		Soil pollution	Contamination of soil may occur from accidental spillages from the machineries.
		Water pollution	If accidental hydrocarbons spills are not removed with immediate effect after they spill, this may lead to surface and ground water contamination. If drilling is conducted within 100m from the river or wetland area water may be contaminated. However, Jubacel company will not prospect within 100m from any water resource.
		Vegetation loss	Some of the vegetation will be disturbed during drilling period.
		Fauna disturbances	Animals within the prospecting area will move to other location or be in danger.
		Waste generation	Littering of domestic and industrial waste during exploration.
		Loss of authentic value	The temporary storage of overburden will be visible to the community.
Topography		The natural slope of the area will be disturbed as a result of boreholes, stick piles and overburden during the prospecting period.	
Conflict of land use	Prospecting activities will have conflict with the current land-use which is farming of livestock.		

		Socio-economic (positive impact)	As with all extractive industries, diamonds prospecting has the potential to generate significant economic benefits. These can be seen directly through increased employment, training, salaries and wages and government revenues (royalties and taxes). It can also provide economic stimulus to the local and broader economy through secondary industries such as retail and service sectors that supply the mine and the mine's employees.
Operational phase	Trenching/pitting	Surface disturbance	The ground will be compacted and will also be excavated.
		Air pollution	Dust will be generated from movement of the prospecting equipment when the gravel is being excavated
		Noise pollution	Noise impact will be created during the prospecting period
		Soil pollution	Contamination of soil may occur from accidental spillages from the machineries.
		Water pollution	If accidental hydrocarbons spills are not removed with immediate effect after they spill, this may lead to surface and ground water contamination. If drilling is conducted within 100m from the river or wetland area water may be contaminated. However, Jubacel company will not prospect within 100m from any water resource.
		Vegetation loss	Some of the vegetation will be disturbed on these areas
		Waste generation	Littering of domestic and industrial waste during exploration.
		Fauna disturbances	Animals within the prospecting area will move to other location.

		Loss of authentic value	The temporary storage areas will be visible to the surrounding community.
		Topography	The natural slope of the area will be disturbed as a result of trenches, stock piles and overburden during the prospecting period.
		Health risk to workers or general public	This can happen if worker or general public inhale excessive dust or drink contaminated water as a result of the prospecting activities. This can also occur if the Mine Health and Safety Act is not implemented
		Socio-economic (positive impact)	As with all extractive industries, diamonds prospecting has the potential to generate significant economic benefits. These can be seen directly through increased employment, training, salaries and wages and government revenues (royalties and taxes). It can also provide economic stimulus to the local and broader economy through secondary industries such as retail and service sectors that supply the mine and the mine's employees.
		Conflict of land use	Prospecting activities will have conflict with the current land-use which is farming/ grazing.
		Heritage sites	Heritage feature may be disturbed during the trenching of the area.
		Decommissioning Phase	Positive impacts
Soil pollution	Contamination of soil from accidental seepage will be cleaned from the site.		
Vegetation loss	The area will be ripped to allow vegetation growth.		
Fauna disturbances	If re-vegetation occur the area will attract animals		
Loss of authentic value	Temporary slime dam will be visible to the surrounding community.		
Topography	The area will be returned to its natural slope.		

2.2.2. Potential cumulative impacts.

Cumulative impacts	Description
Air pollution	Dust will be generated from movement of the prospecting equipment and when the gravel is being excavated will be cumulative since Jubacel will be using existing access roads to access the proposed prospecting sites.
Noise pollution	Noise created by adjacent activities and the proposed prospecting activities. This impact will be cumulative.
Water pollution	If accidental hydrocarbons spills are not removed with immediate effect after they spill, this may lead to surface and ground water contamination.

2.2.3. Potential impact on heritage resources

There are no known areas with a heritage resource on the proposed area under application. South African Heritage Resource Agency (SAHRA) will be consulted in order to find out if it is necessary to conduct Phase 1 of Heritage Impact assessment. If there is a need to conduct the above mentioned study, Phase 1 of Heritage Impact Assessment will be conducted before prospecting activities take place to determine if there are historical site within the prospecting area that need protection. Therefore, there won't be any impact on the heritage sites since the location of the heritage site will be avoided and no prospecting will be done 100m from any heritage resources. If any heritage resource is identified, that area will be fenced-off. Full Heritage Impact Assessment, inclusive of an Archaeological and Paleontological Impact Assessment, will be conducted prior to any bulk sampling related activities occurring within the proposed application area.

2.2.4. Potential impacts on communities, individuals or competing land uses in close proximity.

(If no such impacts are identified this must be specifically stated together with a clear explanation why this is not the case.)

Conflict of land use:

The current land use is livestock farming/grazing land and after rehabilitation of all disturbed area as a result of prospecting activities, the area will be returned to its original state and can again be used as a grazing land. During the prospecting period the area which is going to be prospected will be fenced off in order to avoid any access of game animals into the excavations and boreholes to be prospected. No poaching of game animals will be allowed.

The far owners and the adjacent farm owner may be impacted on by the visual, noise and dust generated from the proposed prospecting of diamonds. Therefore, looking at the extent of the proposed prospecting activities to be conducted and the proposed mitigations for managing the negative environmental impacts, most of the impact will be rated as low.

Noise generation is likely to be one of the biggest impacts at the site during the prospecting operation. All efforts will be made to reduce noise levels via the use of efficient, well maintained equipment and the location of any noise generating equipment in noise checked areas or at distant locations from sensitive receptors.

Socio-economic (Positive impact)

Some of the workers will be employed from the community and the community will be given first preference with regard to employment criteria. Training will be given to the workers meaning that some of the community members will gain skills from the proposed prospecting activities.

2.2.5. Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties,

The list of the potential impacts has been compiled with the participation of the landowner and interested and affected parties (refer to the attached proof of public participation). However consultation will be an on-going process throughout the prospecting period.

2.2.6. Confirmation of specialist report appended. (Refer to guideline)

Due to the limited scope and scale of the proposed prospecting operation no specialist studies were deemed necessary or undertaken. Therefore no specialist report was appended. South African Heritage Resource Agency (SAHRA) will be consulted in order to find out if it is necessary to conduct Phase 1 of Heritage Impact assessment. If there is a need to conduct the above mentioned study, Phase 1 of Heritage Impact Assessment will be conducted before prospecting activities take place to determine if there are historical site within the prospecting area that need protection. The reports of the above mentioned studies will be submitted to DMR and SAHRA. If there is any specialist studies recommended by any of the consulted Departments, such special study will be conducted and the report will be provided.

3. REGULATION 52 (2) (c): Summary of the assessment of the significance of the potential impacts and the proposed mitigation measures to minimise adverse impacts.

3.1.1 Criteria of assigning significance to potential impacts

The assessment of the impacts has been conducted according to a synthesis of criteria required by the integrated environmental management procedure.

Nature of impact

This is an appraisal of the type of effect the activity would have on the affected environmental component. Its description should include what is being affected, and how.

Extent

The physical and spatial size of the impact. This is classified as follows:

Local

The impacted area extends only as far as the activity, e.g. a footprint.

Site

The impact could affect the whole, or a measurable portion of the property.

Regional

The impact could affect the area including the neighbouring farms, transport routes and the adjoining towns.

Cumulative

The impact could have a cumulative effect with the surrounding land uses.

Duration

The lifetime of the impact which is measured in the context of the lifetime of the proposed phase (i.e. construction or operation)?

Short term

The impact will either disappear with mitigation or will be mitigated through natural process in a short time period.

Medium term

The impact will last up to the end of the prospecting period, where after it will be entirely negated.

Long term

The impact will continue or last for the entire operational life of the mine, but will be mitigated by direct human action or by natural processes thereafter.

Permanent

The only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

Intensity

This describes how destructive, or benign, the impact is. Does it destroy the impacted environment, alter its functioning, or slightly alter it. These are rated as:

Low

This alters the affected environment in such a way that the natural processes or functions are not affected.

Medium

The affected environment is altered, but function and process continue, although in a modified way.

High

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases. This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

Improbable

The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

Probable

There is a possibility that the impact will occur to the extent that provisions must be made therefore.

Highly probable

It is most likely that the impacts will occur at some or other stage of the development.

Definite

The impact will take place regardless of any preventative plans, and mitigation measures or contingency plans will have to be implemented to contain the impact.

Determination of significance

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The classes are rated as follows:

No significance

The impact is not likely to be substantial and does not require any mitigatory action.

Low

The impact is of little importance, but may require limited mitigation.

Medium

The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.

High

The impact is of great importance. Failure to mitigate, with the objective to reduce the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

3.1.2. Potential impact of each main activity in each phase, and corresponding significance assessment without mitigation:

PHASES	PROSPECTING ACTIVITY	POTENTIAL IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE		
Construction phase	Site establishment Activities	Surface disturbance	Site	Medium	Medium	Definite	Medium		
		Air pollution	Cumulative	Short term	Medium	Definite	Medium		
		Noise pollution	Cumulative	Short term	Medium	Definite	Medium		
		Soil pollution	Local	Medium	Medium	Definite	Medium		
		Surface and Ground Water Pollution	Local	Medium	Medium	Probable	Medium		
		Vegetation loss	Site	Long-term	Medium	Definite	Medium		
		Fauna disturbances	Site	Long-term	Medium	Definite	Medium		
		Loss of authentic value	Site	Long-term	Medium	Definite	Medium		
		Waste generation	Local	Short-term	Medium	Probable	Medium		
		Topography	Regional	Medium	Medium	Definite	Medium		
		Operational phase	Drilling of 6 Boreholes	Surface disturbance	Site	Medium	Medium	Definite	Medium
				Air pollution	Cumulative	Medium	Medium	Definite	Medium
Noise pollution	cumulative			Medium	Medium	Definite	Medium		
Soil pollution	Local			Medium	Medium	Definite	Medium		
Surface and Ground Water Pollution	Site			Medium	Medium	Probable	Medium		
Vegetation loss	Site			Long-term	Medium	Definite	High		
Fauna disturbances	Site			Long-term	Medium	Definite	Medium		
Loss of authentic value	Regional			Long-term	Medium	Definite	Medium		
Waste generation	Local			Short-term	Medium	Probable	Medium		
Topography	Regional			Medium	Medium	Definite	Medium		
Health risk to workers or general public	Regional			Long-term	Medium	Probable	Medium		
Heritage sites	Local			Short-term	Medium	Probable	Medium		

Decommissioning phase	Trenching Activities	Land use conflict	Regional	Long-term	Medium	Definite	High		
		Surface disturbance	Site	Medium	Medium	Definite	High		
		Air pollution	Cumulative	Long-term	Medium	Definite	Medium		
		Noise pollution	cumulative	Medium	Medium	Definite	Medium		
		Soil pollution	Local	Medium	Medium	Definite	Medium		
		Surface and Ground Water Pollution	Site	Medium	Medium	Probable	Medium		
		Vegetation loss	Site	Long-term	Medium	Definite	High		
		Fauna disturbances	Site	Long-term	Medium	Definite	High		
		Loss of authentic value	Regional	Long-term	Medium	Definite	Medium		
		Waste generation	Local	Short-term	Medium	Probable	Medium		
		Topography	Regional	Medium	Medium	Definite	Medium		
		Health risk to workers or general public	Regional	Long-term	Medium	Probable	Medium		
		Heritage sites	Local	Short-term	Medium	Probable	Medium		
		Land use conflict	Regional	Long-term	Medium	Definite	High		
		Decommissioning phase	Final rehabilitation (removal of equipment and ripping the roads)	Noise pollution	local	Short term	Low	Probable	low
				Air pollution	local	Short term	Low	probable	Low
				Soil pollution	Site	Medium	Low	probable	Medium

3.1.3. Assessment of potential cumulative impacts.

IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE
Air pollution	cumulative	Long-term	Medium	Definite	Medium
Water pollution	cumulative	Medium	Medium	Probable	Medium
Noise pollution	Regional	Medium	Medium	Definite	Medium

3.2. Proposed mitigation measures to minimise adverse impacts.

3.2.1. List of actions, activities, or processes that have sufficiently significant impacts to require mitigation.

Although there are significant activities that pose a greater risk to the significance of impacts on the environment the entire invasive operation will be monitored and mitigation measures implemented to prevent any environmental degradation.

The above mentioned significant activities include:

- Drilling Process
- Trenching/Pitting Process
- Hauling Process
- Maintenance Procedures and Activities
- Water Usage

3.2.2. Concomitant list of appropriate technical or management options

(Chosen to modify, remedy, control or stop any action, activity, or process which will cause significant impacts on the environment, socio-economic conditions and historical and cultural aspects as identified. Attach detail of each technical or management option as appendices)

Air quality:

Air quality will be minimised by means of the following:

- Dust suppressions by means of water spraying on haul roads and unpaved areas when there is a need.
- Avoidance of unnecessary removal of vegetation
- Vehicles will be properly serviced in order for them to minimise emission of CO²
- Re-vegetation of rehabilitated areas not occupied by plant infrastructure to take place as soon as possible.
- Keeping material in the aqueous phase

- All workers will have access to respiratory protection equipment
- Stock piles will always damped
- Speed limit of 40km/hour will be maintained at all times during the lifespan of the prospecting activities.
- Dust fall-out buckets will be installed within and outside the prospecting area in order to monitor dust emission from the prospecting activities. The buckets will be placed in areas where accurate result will be attained.

Flora:

Vegetation will be protected by avoiding unnecessary clearance and by using existing roads at all times. All vehicles will be monitored so that they move on the existing tracks at all times. All prospected areas will be rehabilitated and re-vegetation will take place naturally. If re-vegetation do not take place naturally therefore seeding of the prospected area with surrounding indigenous species will be considered. Rehabilitated area will be monitored to avoid other disturbances on rehabilitated area until vegetation is fully grown. Open fire that will end up destroying the vegetation will be avoided at all times. If invader species are encountered they will be uprooted, felled or cut off and can be destroyed completely. The plants will be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide." Valid permits from Northern Cape Nature Conservation will be obtained before any protected plant species are removed.

Fauna:

- Prospecting areas will be fenced off in order to restrict access of any animal or human.
- Speed limits of vehicles inside the application area will be strictly controlled to avoid road kills.
- No poaching will be allowed on site and the Department of Nature Conservation will be contacted if any endangered species are encountered.
- Any form of snares or traps on the site will be removed and farm and game animals will be relocated if necessary.
- Fire will not be allowed on site and workers will bring their own cooked food.
- Any area that is rehabilitated or decommissioned will be seeded with a seed mixture reflecting the natural vegetation as is currently found and which may attract back animal species.

Noise:

The company will comply with the occupational noise regulations of the Occupational Health and safety Act, Act 85 of 1993. As a minimum, ambient noise levels emanating from the mine will not exceed 82 dBA at the site boundary. The company will comply with the measures for good practice with regard to management of noise related impacts during construction and operation. The management objective will be to reduce any level of noise, shock and lighting that may have an effect on persons or animals, both inside the plant and that which may migrate outside the plant area.

Hearing protection will be available for all employees where attenuation cannot be implemented. If any complaints are received from the farm owner, the general public or state department regarding noise levels, the levels will be monitored at prescribed monitoring points. Appropriate measures will specifically be installed and or employed at the plant to act as screen and to reflect/reduce the noise. The vehicles and the equipment will be equipped with silencers on their exhaust system.

Prospecting will only take place during the day from 07h00-17h00. The site manager will be responsible for monitoring noise within the mine. No loud music will be allowed within the prospecting area. Workers will be inducted with regard to the measure to reduce noise pollution on site.

Soil pollution and surface & ground water contamination:

Topsoil will be stripped and stored separate from overburden and will not be used for building or maintenance of access roads. The stored topsoil will be adequately protected from being blown away or being eroded. The topsoil will be used during the rehabilitation of any impacted areas, after sloping in order to re-establish the same land capability. If any soil is contaminated during the life of the prospecting activities, it will be immediately scooped and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized facility or company for further treatment. Small spills will be treated on site using bio-sorb or oil cap.

Mechanical equipment:

All mechanical equipment will be in good working order/condition and vehicles will adhere to the relevant noise requirements of the Road Traffic Act. All vehicles in operation will be equipped with a silencer on their exhaust system. Safety measures, which generate noise such as reverse gear alarms on large vehicles, will be

appropriately calibrated/adjusted. Hydrocarbon such as diesel or oil will be stored in the mobile tank which will be brought on site on a daily basis. Drip trays will be placed under the mobile tanker and vehicles/equipment in order to avoid accidental spills.

Ground water mitigation:

During rehabilitation, one of the primary considerations is the isolation of material from the environment. This includes measures to reduce the potential long-term impact on groundwater, erosion controls to prevent surface water impacts and cover sequences to prevent biological penetration of tailings structures. Monitoring for this pathway will generally involve environmental sampling determination. However, care is required because of natural variability. In a number of cases the operational component may be far smaller than the natural background levels, the operational component will be determined and taken into account.

Visual impact:

Concurrent rehabilitation will be implemented throughout the prospecting operation, meaning that each borehole will be rehabilitated before moving to the next area to be drilled. One trench will be opened and rehabilitated at a time before moving to the other side. The area will be rehabilitated to its original state meaning that no visual impact will be left on site. All equipment will be removed from site during the decommissioning phase of the prospecting operation.

Conflict of land use

The current land use is farming/grazing land and after rehabilitation of all disturbed area as a result of prospecting activities, the area will be returned to its original state and can again be used as a grazing land. During the prospecting period all live stock or any game animal will be relocated if it is necessary and the prospecting areas will be fenced-off.

Surface disturbance and topography:

Concurrent rehabilitation will be implemented throughout the prospecting operation, meaning that each borehole and a trench will be rehabilitated before moving to the next area to be prospected. All surface disturbed will be rehabilitated at this stage. All compacted ground will be ripped to a depth of 300mm. All rehabilitated areas will be monitored and if vegetation is not growing naturally seeding of the areas will be considered.

Waste generation:

Wastes will be stored temporarily within marked containers where they will be collected every week and deposited to a licenced facility. Industrial waste will be collected by contractors to the registered facility when there is a need. Employees must be instructed on how to tell the difference between hazardous waste and general waste. Littering will not be allowed within or outside the prospecting boundaries.

Impacts on the heritage sites:

Phase 1 of Heritage Impact assessment will be conducted before prospecting activities take place to determine if there are historical site within the prospecting area that need protection. Therefore, there won't be any impact on the heritage sites since the location of the heritage site will be avoided and no prospecting will be done 100m from any heritage resources. If any heritage resource is identified, that area will be fenced-off. South African Heritage Resource Agency (SAHRA) will be consulted in order to find out if it is necessary to conduct the above mention study. Full Heritage Impact Assessment, inclusive of an Archaeological and Paleontological Impact Assessment, will be conducted prior to any bulk sampling related activities occurring within the proposed application area.

3.2.3. Review the significance of the identified impacts

(After bringing the proposed mitigation measures into consideration).

After bringing the proposed mitigation measures into consideration all the impact resulting from the prospecting operation will be medium to low significance. The company will always avoid the impacts to occur within the prospecting areas as a result of their prospecting activities and in areas where they cannot be avoided they will be minimised. Monitoring will be conducted in a daily basis in all areas where possible impacts may occur.

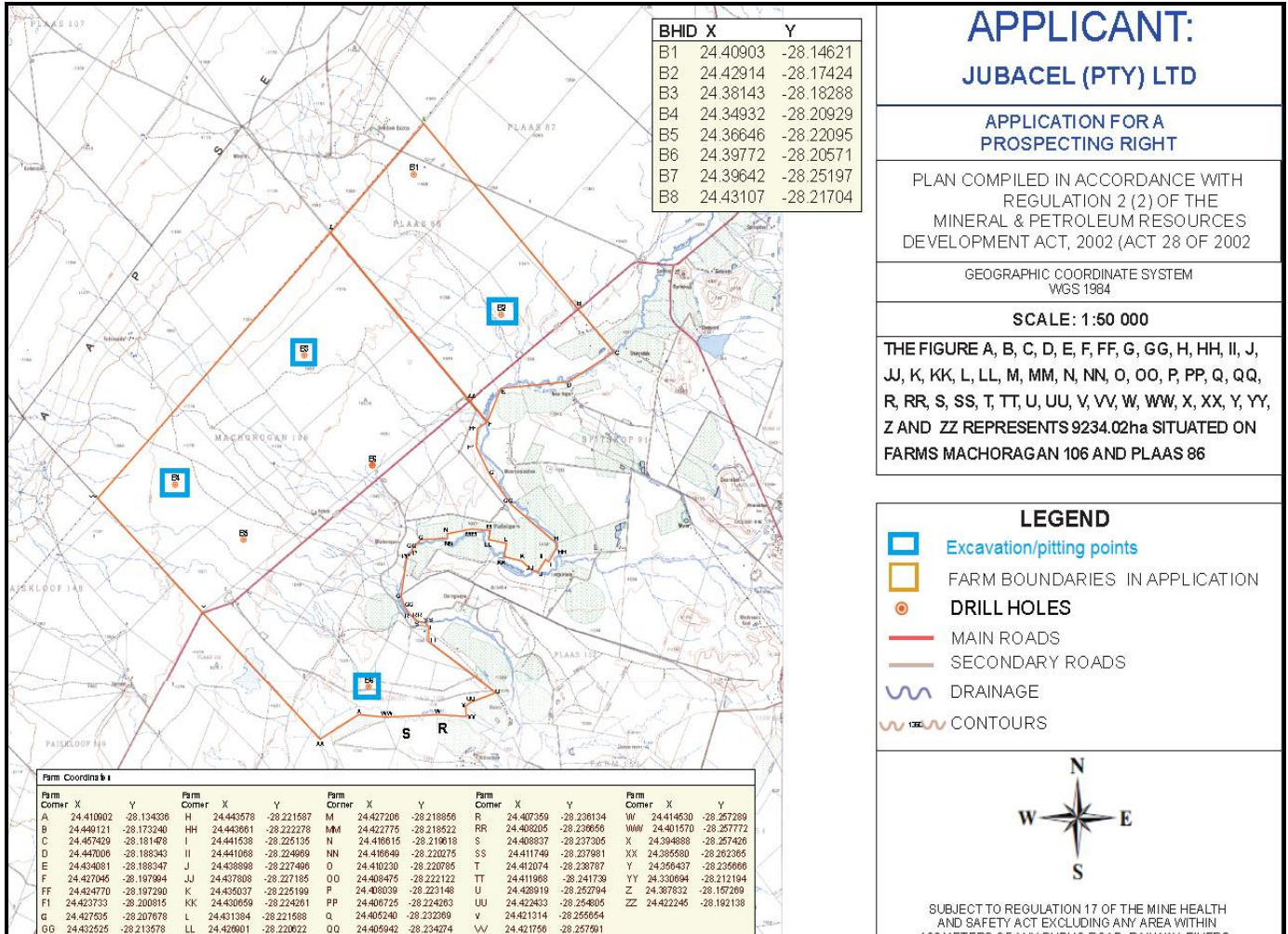
Below is the table of overall significant impacts assessment after mitigation measures being implemented successfully:

IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE
Surface disturbance	Local	Short term	Low	Highly probable	Medium
Air pollution	Regional	Medium	Low	Highly probable	Low
Noise pollution	Regional	Medium	Low	Probable	Low
Soil pollution	Local	Medium	Low	Probable	Low
Surface and Ground Water Pollution	Regional	Short term	Low	Improbable	Low
Vegetation loss	Site	Medium	Low	Improbable	Medium
Fauna disturbances	Local	Medium	Low	Probable	Low
Loss of authentic Value	Site	Medium	Low	Probable	Low
Waste generation	Local	Short-term	Low	Probable	Low
Topography	Site	Short term	Low	Probable	Low
Health risk to workers or general public	Site	Medium	Low	Probable	Low
Heritage sites	Local	Short-term	Low	Improbable	Low
Land use conflict	Site	medium	Low	Probable	Medium
Socio-economic (positive impact)	Cumulative	Long-term	Low	Definite	Low

4. REGULATION 52 (2) (d): Financial provision.The applicant is required to-

4.1. Plans for quantum calculation purposes. (Show the location and aerial extent of the aforesaid main mining actions, activities, or processes, for each of the construction operational and closure phases of the operation).

Main prospecting areas



Boreholes: The total of 7 boreholes will be drilled using reverse circulation and core drilling methods and the area of disturbance will be 10mx10m to a depth of 100m for each borehole site. The total footprint of all 7 boreholes to be drilled will be 700m², or 0.07 ha.

One mini slime dam = 10mx10m= 100m²

Pitting /trenching method Trenches: four trenches will be excavated using excavator to the dimension of 30mx15mx20m. The total footprint of all trenches to be excavated will be 1800m², or 0.18 ha.

Topsoil storage =10mx10mx2m= 100m²

Fence=400m

Mobile Chemical toilets: There will be two mobile chemical toilet measuring 2mx2m to the height of 2m =0.0002ha.

Storage Site-A lockable storage container= $10\text{m} \times 5\text{m} \times 50\text{m}^2$

Mobile Water tanker= 40m^3

Access roads= 400m

Processing area= $30\text{m} \times 20\text{m} = 1000\text{m}^2$

Processing plant= $20\text{m} \times 10\text{m} \times 5\text{m} = 1000\text{m}^3$

4.2. Alignment of rehabilitation with the closure objectives (Describe and ensure that the rehabilitation plan is compatible with the closure objectives determined in accordance with the baseline study as prescribed).

- The closure objectives are to create a post-mining state as close as possible to the pre-prospecting state of the environment. This can be accomplished by the correctness of rehabilitation and proper after-care activities.
- All waste materials shall be dumped into the trenches and boreholes and left to settle, with a layer of topsoil evenly spread over the area to ensure vegetable growth. If deemed necessary, grass seeds will be collected or obtained, sowed and watered. The area where the tailings were removed will be ripped and leave for regrowth of vegetation.
- Unnecessary roads and the plant site will be cleared or foreign materials and ripped to loosen the ground for vegetation re-growth. After final rehabilitation is completed a 1 to 2 year after-care plan is initiated to ensure a satisfying vegetation re-growth rate and the successful establishment of indigenous vegetation.
- **Free draining landform:** The backfilling of the site is important for both safety reasons and also to allow vegetation to re-establish itself in the area. The aim must be to create a free draining landform that is not susceptible to erosion.
- **Self-sustaining ecosystem:** The main goal and objective of rehabilitation is to rehabilitate the area disturbed to the degree that it no longer requires much management intervention. It is important to prevent residual impacts such erosion by water and wind. This is best achieved by re-establishing vegetation communities. Re-vegetation will occur naturally overtime as the area has a small area of disturbance and will be colonised by surrounding vegetation. However, monitoring the area to ensure weed species do not establish recolonize is important. Due to prevailing climate it is not expect that weeds will colonise quickly and should therefore only require limited monitoring intervals. Every four

(4) months for two years should be sufficient to adequately monitor the rehabilitation of the area.

The closure objectives are also include the following:

- To prevent the sterilization of any ore reserves.
- To prevent the establishment of any permanent structures or features.
- To manage and limit any impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- The mine also has the objective to establish a stable and self-sustainable vegetation cover.
- To limit and rehabilitate any erosion features and prevent any permanent impact to the soil capability of the mine.
- To limit and manage the visual impact of the mine.
- To safeguard the safety and health of humans and animals on the mine.
- The last closure objective is that the mine is closed efficiently, cost effectively and in accordance with government policy.

4.3. Quantum calculations. (Provide a calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation 54 (1) in respect of each of the phases referred to).

CALCULATION OF THE QUANTUM

Applicant:
Evaluators:

JUBACEL (PTY) LTD
Ndi Geological Consultant Service

Ref No.:
Date:

NC30/5/1/1/3/2/1/ 11464 PR
Jan-15

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m3	1000	12,21	1	1	12210
2 (A)	Demolition of steel buildings and structures	m2	0	170,13	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	250,72	1	1	0
3	Rehabilitation of access roads	m2	400	30,44	1	1	12176
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	295,49	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	161,18	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	340,26	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0,18	173174,97	0,52	1	16209,17719
7	Sealing of shafts adits and inclines	m3	0	91,33	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	118912,29	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0,01	148103,1	1	1	1481,031
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	430161,62	1	1	0
9	Rehabilitation of subsided areas	ha	0	99571,13	1	1	0
10	General surface rehabilitation	ha	0,1652	94198,59	1	1	15561,60707
11	River diversions	ha	0	94198,59	1	1	0
12	Fencing	m	400	107,45	1	1	42980
13	Water management	ha	0,02	35816,95	1	1	716,339
14	2 to 3 years of maintenance and aftercare	ha	0,18	12535,93	1	1	2256,4674
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							10359,6217

1	Preliminary and General	12430,8746	weighting factor 2		12430,8746
			1		
2	Contingencies		10359,06217		10359,06217
Subtotal 2					126380,56
VAT (14%)					17693,28
Grand Total					144074

4.4. Undertaking to provide financial provision

(Indicate that the required amount will be provided should the right be granted).

The financial provision to the amount of R144,074.00 will be provided to the department by means of bank guarantee or cash deposit or any approved method.

5. Regulation 52 (2) (e): Planned monitoring and performance assessment of the environmental management plan.

5.1. List of identified impacts requiring monitoring programmes.

All prospecting actions, activities and processes should be monitored against the mitigation measures as stipulated above in Section 3.2.2 of this document on a regular basis.

- Dust
- Water
- Noise
- Interference with existing land uses;
- vegetation
- Displacement, injury and death of local fauna;
- Soil erosion;
- Soil contamination and pollution;
- Waste generation and disposal.

5.2. Functional requirements for monitoring programmes.

1. Air quality (Dust) the site environmental personnel will be responsible for managing all environmental impact as a results of the prospecting activities. he/she will make sure that the following measures are implemented:
 - a) Roads are sprayed by water when there is a need.
 - b) This impact will be monitored throughout the day and where it is encountered it will be suppressed by means of spraying water.
 - c) Atmospheric pollution prevention Act will be followed at all times.
 - d) Dust fall-out buckets are properly located and this must also be monitored throughout the day.
 - e) Monitoring of dust exposure will includes use of active air sampling, passive dust collectors.
 - f) The National Environment Management: Air Quality Act, 2004 (Act No.39 of 2004) (All Sections of this Act, except Section 21,22,36 to 49, 51 (1)(e), 51(1)(f), 51(3), 60 and 61 have taken effect on 11 September 2005); will be adhered to at all times.

- g) The Prospecting Health and Safety Act, 1996 (Act No. 29 of 1996) as amended and other legislation or regulations will also be adhered to at all times to avoid air pollution.
2. Soil and Water Pollution- the vehicles and equipment will be monitored before the commencement of any daily prospecting activity to avoid any soil contamination which may lead to ground water contamination. Surface water will be protected by adhering to The National Water Act, 1998 (Act No. 36 of 1998).
3. Noise- Bureau of Standards Code of Practice for the Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes, SABS 083 as amended, in any place at or in any mine or works where persons may travel or work, exceeds 82 dB (A), the site manager will take the necessary steps to reduce the noise below this level. noise monitor machine will be used to find out if the noise generated from the prospecting activities is exceeding the standard. The following will be adhered to:
- a) The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) – Section 7.
 - b) The Mine Health and Safety Act, 1996 (Act No. 39 of 1996) as amended.
 - c) The Road Traffic Act, 1997 (Act No. 93 of 1997);
4. Interference with existing land uses:
- Inform landowners in writing of intent and comply with reasonable request to reduce the impact.
 - Negotiate compensation for interference with landowner/lawful occupier
 - Visual confirmation of rehabilitation
 - Approval of rehabilitation by landowner/lawful occupier
5. Vegetation:
- Site clearance to be kept to a minimum and avoid unnecessary removal of vegetation.
 - Visual inspection to make sure that vehicle utilise the existing tracks as possible.
 - No removal, disturbance or pruning of large to medium shrubs or tress
 - Visual marking of sensitive species

6. Displacement, injury and death of local fauna:
 - Site clearance to be kept to a minimum
 - Visual marking of sensitive species and areas
 - Visual inspection of fencing and/or other safety measures
 - On site log to be kept

7. Soil erosion:
 - Visual confirmation of soil erosion controls, soil profile disturbance and topsoil management where required.

8. Waste generation and disposal:
 - Visual inspection that waste does not accumulate inside or outside drill site.
 - All waste such as oil spills must be stored separately and disposed of at a registered facility
 - Proof of disposal must be kept on site.
 - EMP checklist will be compiled and utilised during the prospecting period

5.3 Roles and responsibilities for the execution of monitoring programmes.

The environmental officer, geologist will be responsible for all monitoring programmes. The site manager will be responsible overall monitoring programs.

5.4 Committed time frames for monitoring and reporting.

All the impacts will be monitored through-out the prospecting period on the daily basis and the Monitoring report will be submitted to the Department of Mineral Resources on the annual basis.

6. REGULATION 52 (2) (f): Closure and environmental objectives.

6.1. Rehabilitation plan

(Show the areas and aerial extent of the main prospecting activities, including the anticipated prospected area at the time of closure).

The goal of rehabilitation with respect to the area where drilling and trenching took place is to leave the area to similar to its previous state prior prospecting activity. All other equipment's and material used during operation will be removed from the area, including other waste. Removal of these materials shall be done on a continuous basis and not only at the final stage of rehabilitation and closure.

- Rehabilitation of drilled holes will be done immediately after each hole is finished to prevent degradation of the environment and to prevent injuries.
- RC drill holes will be backfilled with drill samples and cement.
- Overburden will be stored adjacent to the trenches in order to avoid any delay during rehabilitation period.
- All trenches and slime dam will be rehabilitated using overburden material following their sequence and topsoil be spread over.
- If water is encountered the drill hole will be discussed with the surface owner and if the surface owner decides to keep it the necessary arrangements will be made.
- The compacted ground will be ripped to a depth of 300mm
- Mobile equipment will be removed from the site

The slope of the rehabilitated area will be flat after rehabilitation. Since the area will be seeded with surrounding plant species, this will attract back the animal life into the area. The final land use of the prospecting area will be returned back to livestock farming/ grazing land.

6.2. Closure objectives and their extent of alignment to the pre-mining environment.

Closure objectives:

The closure objectives are to create a post-prospecting state as close as possible to the pre-prospecting state of the environment. This can be accomplished by the correctness of rehabilitation and proper after-care activities.

- To prevent the sterilization of any ore reserves.
- To prevent the establishment of any permanent structures or features.
- To manage and limit any impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- To safeguard the safety and health of humans and animals on the mine.
- The last closure objective is that the mine is closed efficiently, cost effectively and in accordance with government policy.

6.3. Confirmation of consultation

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

The environmental objectives in relation to closure have been consulted with landowners, interested and affected parties. A copy of the EMP has been provided to the interested and affected parties

7. REGULATION 52 (2) (g): Record of the public participation and the results thereof.

7.1. Identification of interested and affected parties.

(Provide the information referred to in the guideline)

The following interested and affected parties were identified and public participation was undertaken by sending letters via registered post. The prospecting background information Document & the Prospecting Work Programme were also attached in order to give them a summary of the prospecting activities to be conducted. Advertisement was also placed on the local newspaper **(the proof has been attached as an appendix)**

Table of the surface owners

SURFACE OWNERS	PROPERTY	TITTLE DEED
Katfontein Cc	Portion 2 of Farm No.106	T1428/1973
Cooke Cathrina Wilehlmina	Portions 3-5 of farm no.106	T3761/2003
Burger Andries Johannes	Portion 9 ,13 & 23 of farm no.106	T4395/2004, T550/2002 & T1113/2008
Boer Fourie Pty Ltd	Portion 11& 17 of farm no.106	T1896/2001
Maritz Christina Johanna	Portion 22 of farm no.106	T2146/2004
De & P 29 Inv Pty Ltd	Portion 18 of farm no.106	T4777/2000
National Government Of The Republic Of South Africa	Farm 86	T2783/2011

Other interested and affected parties identified:

1. Department of Land Affairs/Rural Development
2. Dikgatlong Local Municipality-The Municipality where the application area fall under.
3. DMR- Mine Health and Safety
4. Department of Water Affairs
5. Department of Environment and Nature Conservation
6. Department of Labour
7. South African Heritage Resources Agency
8. Department of Mineral Resources

7.2. The details of the engagement process.

7.2.1. Description of the information provided to the community, landowners, and interested and affected parties.

The prospecting background information Document & Prospecting Work Programme was also attached in order to give them a summary of the prospecting activities to be conducted. Advertisement was also placed on the local newspaper. Letters of response to their concerns were forwarded to the interested and affected parties in order to clarify they were not understanding. (Refer to the attached background information appended).

7.2.2. List of which parties identified in 7.1 above that were in fact consulted, and which were not consulted.

List of Interested and affected parties consulted:

- Dikgatlong Local Municipality
- Eskom
- Katfontein Cc
- Cooke Cathrina Wilehlmina
- Burger Andries Johannes
- Boer Fourie Pty Ltd
- Maritz Christina Johanna
- De & P 29 Inv Pty Ltd
- National Government Of The Republic Of South Africa

7.2.3. List of views raised by consulted parties regarding the existing cultural, socio-economic or biophysical environment.

Katfontein close corporation (farm owner of portion 2 of farm no.106) raised the following concerns:

It was indicated on their response letter that was received from that the farm is used for agricultural purposes eg Cattle and sheep livestock farming. It was also stated on the letter that the area has been zoned for agricultural purposes.

Water issues: Katfontein close corporation also mentioned that water is scarce in the area. However due to the scale of proposed prospecting activities small volume of water will be required for the whole operation. The company is planning to drill one borehole which will be used for prospecting purposes. However if there is any concern raised by the farm owner other provisions may be used with the consultation of the farm owners.

Eskom has provided the company with a form to be completed if blasting will be conducted within 500m from the power lines during the prospecting period. No blasting will be conducted during this project (please refer to the appended response letter received from Eskom for detailed information).

7.2.4. List of views raised by consulted parties on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting operation.

Katfontein close corporation (farm owner of portion 2 of farm no.106) raised the following concerns:

It was indicated on their response letter that was received from that the farm is used for agricultural purposes eg Cattle and sheep livestock farming. It was also stated on the letter that the area has been zoned for agricultural purposes.

Water issues: Katfontein close corporation also mentioned that water is scarce in the area. However due to the scale of proposed prospecting activities small volume of water will be required for the whole operation. The company is planning to drill one borehole which will be used for prospecting purposes. However if there is any concern raised by the farm owner other provisions may be used with the consultation of the farm owners.

Eskom has provided the company with a form to be completed if blasting will be conducted within 500m from the power lines during the prospecting period. No blasting will be conducted during this project (please refer to the appended response letter received from Eskom for detailed information).

7.2.5. Other concerns raised by the aforesaid parties.

Katfontein close corporation (farm owner of portion 2 of farm no.106) raised the following concerns:

It was indicated on their response letter that was received from that the farm is used for agricultural purposes e.g. Cattle and sheep livestock farming. It was also stated on the letter that the area has been zoned for agricultural purposes.

Water issues: Katfontein close corporation also mentioned that water is scarce in the area. However due to the scale of proposed prospecting activities small volume of water will be required for the whole operation. The company is planning to drill one borehole which will be used for prospecting purposes. However if there is any concern raised by the farm owner other provisions may be used with the consultation of the farm owners.

Eskom has raised a concern with regard to the disturbance to power line if blasting will be conducted within 500m from the power lines during the prospecting period. A form was also provided for the company to complete if blasting activities will take place within 500m from power line. No blasting will be conducted during this project (please refer to the appended response letter received from Eskom for detailed information).

7.2.6. Confirmation that minutes and records of the consultations are appended.

Jubacel (Pty) Ltd hereby confirm that all records of the consultations are appended. The company will also provide the minutes of the meeting that will take place in January 2015 with the interested and affected parties will be provided to DMR.

7.2.7. Information regarding objections received.

No objection was received up to date. Should any objection be received it will be included in the EMPlan and submitted to DMR.

7.3. The manner in which the issues raised were addressed.

Letters were sent to all the affected parties who raised concerns. Some of the documents have been already sent to the farm owner as requested (**please refer to the response letters attached sent to the interested and affected parties for more detail**).

8. SECTION 39 (3) (c) of the Act: Environmental awareness plan.

8.1. Employee communication process

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

Training will be provided to all employees. Initial environmental induction and or awareness will be conducted before commencement of any daily activity to all employees.

8.2. Description of solutions to risks

(Describe the manner in which the risk must be dealt with in order to avoid pollution or degradation of the environment).

Everyday Awareness

Littering – All workers will be educated on how important is the wild animals that can be harmed or die if they litter any garbage such as plastics for example. Littering of non-degradable wastes such as plastics, glass, rubber and tyres can also pollute our environment since they will not be decomposed. Workers will also educated to separate their waste so that they can be recycled and reused. No glass, paper, plastics and cigarette duds are to be littered during the duration of the prospecting operations. Marked garbage containers will be installed and maintained to prevent littering by workers. Penalties will be communicated to the worker if they do not follow the protocol with regard to littering.

Open fires – Barkly west is an arid district with less than moderate rainfall per annum. It is however by law prohibited to start open fires. Due to the hot and dry conditions of the district is it very susceptible for runaway fires. No open fires will be tolerated during the prospecting period and as this is regarded by law as a criminal offence related penalties can be issued. The littering of self-ignitable substances or objects (e.g. matches) are also not allowed as it will always pose a danger regarding field fires, and if such happen the person responsible to the littering will be charged with arson and related penalties can be issued.

Sanitation and Personal Hygiene

Sanitation and personal hygiene is a very important subject for environmental and social health. Improper sanitation habits can lead to intestinal parasite infestations within humans and animals, endangering the overall health of the recipients. Unfortunately these infestations do not stay only within the host and will spread rapidly throughout a community or herd. Human viruses like Tubercle bacillus (TB) and Herpes simplex, both are very contagious, spread vigorously throughout a community not handling good hygiene habits/practices. Strict use and cleanliness of the toilette facilities will be enforced during the entire life of mine. Employees will further be advised and educated on the importance of consuming clean and fresh water. Several sites will be identified and water tanks will be erected for safe human water consumption.

Fauna –Mine employees will be advised to stay clear from any wild animal or reptile and not to try and provoke them in any manner. They will further be educated on dangerous and poisonous reptiles and the actions to be taken when such reptiles are encountered.

Flora- No indigenous shrubs or trees will be unnecessarily uprooted and utilized for firewood, the employees will rather be advised to utilize pioneer species and be educated on which plant species are indigenous, endangered or pioneer. If any pioneer species are observed the reporting thereof to the rehabilitation site manager will be highly recommended. Penalties will be given to individuals that damage any endangered species e.g. cutting branches/bark from a Camel/Grey Camel tree.

Work Related Awareness

- When handling chemicals make sure of non-spillage procedures are followed
- Scrap must be disposed of in the most appropriate manner
- Plastics and domestic wastes removed from the vehicles need to be discarded in the appropriate manner.
- Daily checking of oil/diesel before vehicle is operated.
- Drip pans must be installed under all stationary vehicles and equipment.
- Strict adherence to the prospecting roads and no off-road driving to prevent trampling to the vegetation.

- Driving speed must be complied with. Beware of animals, workers and other vehicles.
- During fencing/rehabilitation common fence wires may not be left scattered as these rust over time – any cuts to animals and humans (sepsis and tetanus risk) can lead to suffering or great discomfort.
- No metals may be left scattered as it pose the same thread as described directly above.
- All personnel handling work related chemicals must follow handling procedures – any spillage contaminating the ground will pose risk to environmental degradation.
- All workers must always wear protective clothing at all time to reduce health and safety risk.

8.3. Environmental awareness training.

(Describe the general environmental awareness training and training on dealing with emergency situations and remediation measures for such emergencies).

ENVIRONMENTAL AWARENES TRAINING PROGRAMME PROCEDURE

Natural resources are limited and not always renewable and it is the responsibility of management to ensure that all employees are trained to understand the impacts of their tasks on the environment and to reduce them wherever possible. Environmental awareness training will be given to new employees on site and any contractors who may come onto site for a short period of time. Refresher training must be given to permanent employees on an annual basis. The objective of this procedure is to ensure that all employees on the, including contractors, are competent to perform their duties, thereby eliminating negative impacts on their safety, health and the environment.

The Environmental topics to be covered in awareness training should include the following:

Resource Management

a. The importance of saving water

- i. South Africa is a water scarce country and rivers are polluted
- ii. Do not throw litter into river or water drains
- iii. Do not dispose of oils in sewers

b. Air pollution - Climate change

- i. The use of fossil fuels is increasing the amount of greenhouse gases that are discharged to the atmosphere. Share transport or use public transport
- ii. Don't burn any rubbish, the smoke pollutes the air
- iii. Plant trees, they clean the air, provide us with oxygen and remove the greenhouse gas carbon dioxide from the air.

c. Soil conservation

- i. Prevent overgrazing of farmlands, keep vegetation on the surface of the land to prevent soil erosion
- ii. Plant trees

HAZARDOUS SUBSTANCE USE AND STORAGE

- a. Solvents, petrol, diesel, insecticides, chlorine, detergents, and chemical fertilisers are harmful to the environment and to your health. Use them sparingly and do not let them get into the water systems. Containers must be disposed of to a licensed hazardous waste disposal facility
- b. Hazardous substances must be stored and used correctly
- c. Ensure that 16 point Material Substances Safety Data Sheets (MSDS) are available at point of store
- d. Compressed gas storage requirements
- e. Flammable substances store requirements

INCIDENT & EMERGENCY REPORTING

The company must have an emergency / incident reporting system whereby environmental incidents can be reported and actioned to mitigate and follow up on.

OIL / DIESEL/ PETROL SPILL CLEAN UP

All employees who work with machines and vehicles must be instructed how to prevent and clean up an oil or diesel spill appropriately. Spill kits must be available on site, drip trays must be used when servicing vehicles or machines.

CONSERVATION OF WATER

- Campaign to save water on site
- Clean water is expensive and potable water must be used carefully

- Prevent pollution of water by preventing spills and dispose of wastes properly

CONSERVATION OF VEGETATION

Plants, grasses and trees are very important to our existence on the earth, they provide food, fuel, shelter, raw materials and they clean the air. Indigenous plants are important for medicinal purpose and the whole ecology of life. Human activities are destroying the natural forests of the earth.

- a. Vegetation cover reduces water and topsoil loss from the ground, do not clear vegetation unnecessarily
- b. Indigenous trees provide shade, attract wild birds
- c. Do not chop down indigenous trees without good reason
- d. Implement a tree planting programme
- e. Remove alien invasive trees in the area such as Prosopis, Syringa and Pepper trees, cactus plants.

WASTE MANAGEMENT

- a. Employees must be instructed on how to tell the difference between hazardous waste and general waste
- b. They must know how to separate hazardous and general waste and where to dispose of these wastes in the correct way
- c. Examples of hazardous waste which must be recycled or sent to Waste Tech for disposal:
 - i. Oil, diesel, batteries, acids, paint, thinners, electronic waste
 - ii. Pesticides, jik, handy Andy
 - iii. Old oil, old oil filters, old paint is hazardous and must not be disposed of to a general land fill. Oilkol of the Rose Foundation will collect old oil.
 - iv. Mercury in fluorescent light bulbs is hazardous, fluorescent lights must be handled with great care so as not to break the glass and release the mercury vapour into the air which you breathe.
- d. Examples of general wastes which can go to the municipal landfill: Wood, paper, plastic, glass, old PPE
- e. Recycle, Reuse, Reduce, and Recover where ever possible

EMERGENCY PREPAREDNESS

Emergency response programmes will include procedures for:

- assigning responsibilities and accountabilities;
- assessing and classifying emergencies;
- assessing source terms and consequences;
- activating and implementing emergency responses;
- notifying and alerting site personnel and other stakeholders, including the public (on-site and off-site communications);
- protecting on-site and off-site emergency response personnel;
- assembling, protecting and evacuating personnel;
- responding to over-exposures, contamination incidents, injuries or fatalities;
- Post-accident monitoring and assessments of systems, effluents and conditions (e.g. observations, tests, measurements, collection of samples, sample preparation and analysis, reporting results of sampling, measurements and tests);
- documenting and controlling the exchange of information;
- effecting scheduled shift changes and workplace turnovers;
- controlling vehicular and human traffic;
- directing, controlling and supporting emergency responses;
- develop a plan of activities to protect personnel and the public in the case of an emergency situation and its consequences;
- develop an accident response plan and implement emergency preparedness measures and emergency response activities

Readiness for accident elimination

One of the main issues for readiness in limiting and eliminating emergency consequences is adequate training of the workforce and rescue service personnel. Training for emergency situations includes the development and co-ordination of instructions and other guidance, distribution of this material to all potentially impacted organisations as well as providing the proper equipment and training for

rescue services personnel. Training at the mine facilities is conducted according to a plan that is approved by the territorial division of the authorised body. It is conducted under the supervision of the territorial division of the authorised body and results of the training exercise are documented in a report. Control over the implementation of proposals contained in the report is charged to the head of the organisation.

CONCLUSION

The company will utilize the Environmental Awareness Plan (EAP) to assure that all employees and contractors are aware of the environment and know how to manage it correctly. The company will also utilize EAP to ensure that their health and safety is protected throughout the prospecting operation

9. SECTION 39 (4) (a) (iii) of the Act: Capacity to rehabilitate and manage negative impacts on the environment.

9.1. The annual amount required to manage and rehabilitate the environment.

(Provide a detailed explanation as to how the amount was derived)

The annual amount required to manage and rehabilitate the environment is R144,074.00 as calculated in Section 4.3 of this document.

9.2. Confirmation that the stated amount correctly reflected in the Prospecting Work Programme as required.

The amount required to cover the prospecting operation was calculated to an amount of R144,074.00 as reflecting on the Prospecting Work Programme.

10. REGULATION 52 (2) (h): Undertaking to execute the environment management plan.

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises EIA and EMP compiled in accordance with the guideline on the Departments official website and the directive in terms of sections 29 and 39 (5) in that regard, and the applicant undertakes to execute the Environmental management plan as proposed.

Full Names and Surname	Joachim Otsile Mokwena
Identity Number	7007145879084

-END-

Appendix 1

Public participation

Letters sent interested and affected parties

Tracing numbers for the posted letters

Background information

Newspaper advert