mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: PICO DIAMONDS (PTY) LTD

REFERENCE NUMBER: (NC) 30/5/1/3/2/10461PR

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.

ITEM	COMPANY CONTACT DETAILS
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ITEM	CONSULTANT CONTACT DETAILS (If applicable)
Name	
Tel no	
Fax no:	
Cellular no	
E-mail address	
Postal address	

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.

(i) Air Quality:

Current sources of impacts on air quality are:-

- Dust from the mining activities on the adjacent farm Bellsbank 83.
- Emissions from the Vehicles going to the mine (Bellsbank 83).
- Dust from the gravel (farm) roads intersecting the property.
- Smoke caused by burning of the harvest stubbles on irrigation lands.

The general air quality on the property is expected to be good.

(ii) Fauna:

- Most of the landowners keep their livestock and wild animals in the farms.
- Large antelope species are anticipated to be present from the area since there is no cultivation or farming going on.
- The normal array of small mammals and birds that are associated with the Azonal Vegetation Type might be expected.
- When these animals receive the noise from the drilling rig and other vehicles they will automatic or natural move/run away from the operation site.

(iii) Flora:

- This is an open savanna, with Umbrella Thorn *Acacia tortilis* and Camel Thorn *A. erioloba* the dominant tree species, and scattered individuals of Shepherd's Tree *Boscia albitrunca* and Sweet Thorn *Acacia karroo.*

- *The* shrub layer is poorly to moderately developed in places and individuals of Camphor Tree *Tarchonanthus camphoratus,* Spike-flowered Black Thorn *Acacia mellifera,* Wild Raisin *Grewia flava and Lycium hirsutum* occur widely scattered.

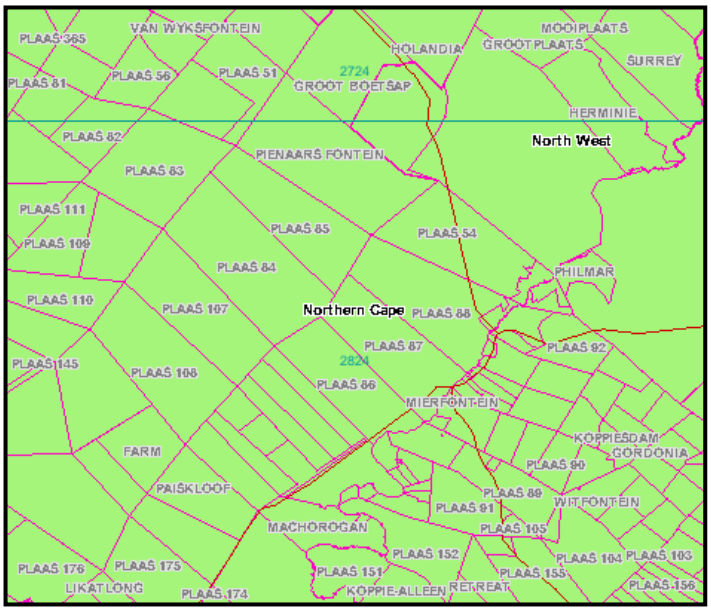

Figure 1 – Savanna Biome

The grass layer is fairly well developed and grasses such as Redgrass *Themeda triandra,* Common Nine-awn Grass *Enneapogon cenchroides,* Lehmann's Lovegrass *Eragrostis lehmanniana, Elionurus muticus and Cymbopogon plurinodis* are conspicuous.

(iv) Ground Water:

The proposed application is located in the tertiary catchment area C33C. The catchment area forms part of several non-perennial streams.

Water for domestic use by the surface owner at his residence is obtained from a borehole. The ground water quality is expected to be of good quality.

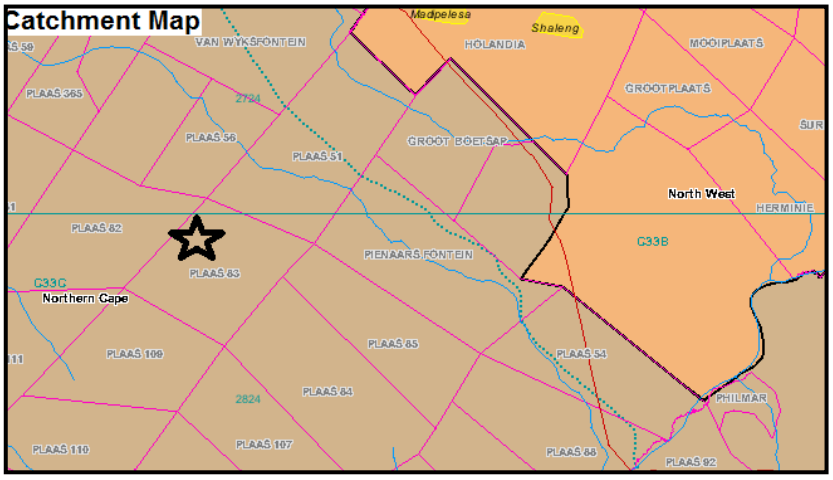

Figure 2 - Catchment Map

(v) Noise:

There is nothing currently running within the proposed application area. Therefore there is no noise disturbance.

(vi) Soil and geology:

The area is situated in an area largely underlain by new horizontal sedimentary rocks of the Ghaap-Plato Super-group. Some areas are covered by calcrete cover in the north eastern portion of the farm.

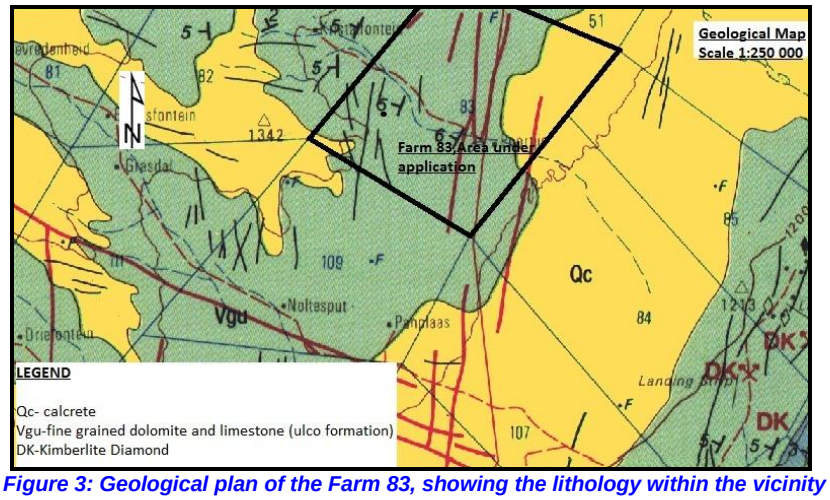

Figure 3: Geological plan of the Farm 83, showing the lithology within the vicinity

(vii) Surface Water:

- The non-perennial river (kristalfontein) cut through the farm towards the North West to south east.

No surface water available in the farm.

(viii) Topography:

- The application area is situated on flat alluvial terraces supporting complex of fine grained dolomite and limestone rock.
- Numerous non-perennial streams flow from the NW to SE direction in the central part of the project towards the Bellsbank Mine.
- This includes the Kristalfontein River. The lowest topographical elevation in the area of interest is 1260 above sea level, whereas the highest elevation is 1323 above sea level.

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

- There are no known environmental features that require protection, remediation or avoidance in the area under application.
- The vegetation within the proposed area consists of open savanna, of Kimberley thorn bushveld classified as of least concern.
- Farm 83 where the operation will takes place is largely that of barren land with scattered bushes and grasses.

If the following areas are identified, will be avoided by all means during the proposed prospecting operation as shown below:

- A buffer zone of 100m meters from rivers and streams, outside the floodplain and above the 1:50 year flood level mark.
- A buffer zone of 100m around heritage sites, including buildings older than 60 years and cemeteries.
- A buffer zone of 100m around farmsteads and all other residential areas.
- Buffer zone of 50m from roads.

The following potential impacts will have to be managed / mitigated throughout the mining operation:

a. Air quality
b. Noise

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

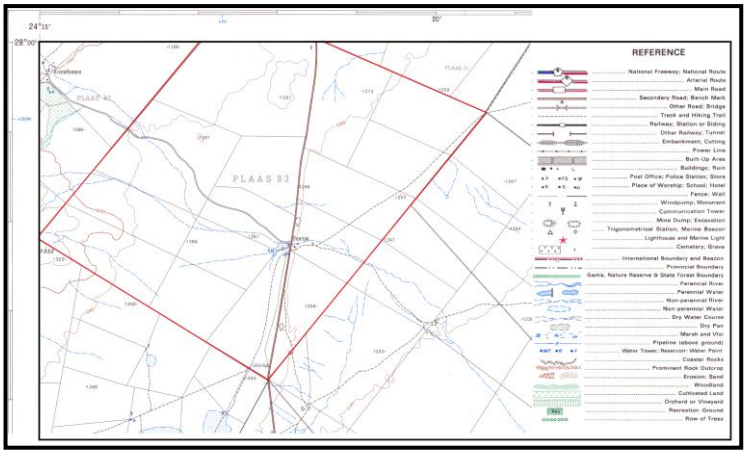

Figure 4 - Environmental features on surrounding area

From the 1:50 000 topographic map, There are no environmental, cultural/heritage and current land use features inside the 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,

Letters have been sending by registered mail to the identified interested and affected parties and an advert had been placed in the local newspaper for any other Interested and affected party who might come forward. The Company are awaiting the comments for the above letters and advert.

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)

The planned prospecting operation will create the following:

- Erecting temporary structures, e.g. toilets and the construction of access roads;
- Dedicated topsoil storage area should they be a need to construct temporary road;
- Drill sites.

2.1.2 Plan of the main activities with dimensions

Geological mapping:

• Linear geological mapping will be done in the form of field mapping to confirm the outcrops delineated during the aerial photo studies and to identify possible sample sites for the surface sampling phase.

Geochemical survey-indicator mineral geochemistry:

50 samples of loam and stream sediment will be collected and analyzed. Heavy mineral fraction will be extracted from these samples by process of gigging, heavy liquid separation, followed by hand picking of suspected kimberlite indicator minerals. The results of this work will give a clear indication of the potential diamond grade and diamond quality of the underlying kimberlite bodies.

Clearing of vegetation for roads and drill sites:

• Existing roads will be identified so that they can be used.

• If new roads have to be constructed, the route shall be selected so that the minimum vegetation needs to be cleared.

• New access roads will be designed and constructed with appropriate sediment and erosion control.

Drilling:

Location of the boreholes to be drilled will be selected based on the information gathered from the magnetic survey. At this stage the number of boreholes is unknown since this phase is controlled by information from phase 1. Drilling will be done on 3m x3m dimension.

Once the magnetic is complete, Geophysical report with plans indicating ore body with sub-outcrop/s of kimberlite ore will be produced.

It is estimated that 10 boreholes of percussion will be drilled to a depth of 300m.

Core drilling will be carried out on selected kimberlite occurrences that showed that economic quantities of diamonds could be present. This drilling will be designed to examine the kimberlite body in depth, to establish the structures of the different types of kimberlite and to furnish samples for indicator mineral geochemical analyses.

It is estimated that ±5 boreholes will be drilled

• Drilling will be as follows; RC drilling will be done from surface to penetrate through the overburden, where after the hole will be cased and the formations containing the mineral layers will be core drilled.

• The core will be logged, cut and sampled for analyses of the various ore layers.

Rehabilitation:
• Rehabilitation of drill 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.
• Core drill holes will be closed by using the plug and casing method.

2.1.3 Description of construction, operational, and decommissioning phases.

- Construction phase:

  The construction phase will commence upon granting of the Prospecting Right application. The proposed operation site will be established during this phase whereby the dedicated areas will be demarcated. This phase will include erecting temporary structures, e.g. toilets and the construction of access roads and drill sites.

  • Timeframe: 1 month

- Operational phase:

The operational phase will be conducted in two phases. The prospecting has been divided in two; Surface sampling (soil and stream) and Drilling. Once geochemical survey is complete drilling will follow. Each completed bore hole will be rehabilitated before drilling commence in the next bore hole.

•Timeframe – 16 months

- Decommissioning phase:

The decommissioning phase will only commence once all the prospecting is completed. During decommissioning all this phase all erected structures, e.g. toilets will be removed and the access roads and drill sites will be rehabilitated to their previous state.

• Timeframe: 1 month

2.1.4 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 activities are applicable according to NEMA EIA regulations:

Activity 20	Any activity requiring a mining permit in terms of Section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act no 28 of 2002) or renewal thereof.

2.2 Identification of potential impacts

(Refer to the guideline)

2.2.1 Potential impacts per activity and listed activities.

Prospecting/NEMA Activity	Potential impact on:	Type of impact	Description
Roads	❖ Air quality	Negative	❖ Nuisance dust will be created by the prospecting equipment moving from and to the drilling site.

	❖ Fauna	Negative	❖ Where new roads will be created the natural habitat of the animals will be disturbed and/or destroyed.
	❖ Flora	Negative	❖ Where new roads will be created the vegetation will be disturbed and/or destroyed.
	❖ Ground Water	Not applicable	❖ No impact to groundwater is expected from the roads that will be used by the planned operation.
	❖ Noise	Negative	❖ Noise from the prospecting equipment on the roads will be created.
	❖ Soil	Not applicable	❖ No impact to soil is expected from the roads that will be used by the planned mining operation.
	❖ Surface Water	Not applicable	❖ No impact to surface water is expected from the roads that will be used by the planned mining operation.
	❖ Topography	Not applicable	❖ No impact to the topography is expected from the roads that will be used by the planned operation.
	❖ Visual	Negative	❖ The roads will be visible to some extent from the immediate surroundings.
Prospecting Activity	Potential impact on:	Type of impact	Description
Drilling	❖ Air quality	Negative	❖ Nuisance dust will be created by the drilling equipment drilling material from the boreholes
	❖ Fauna	Negative	❖ Where new boreholes will be

			created the natural habitat of the animals will be disturbed and/or destroyed.
	❖ Flora	Negative	❖ Where new boreholes will be created the vegetation will be disturbed and/or destroyed.
	❖ Ground Water	Not applicable	❖ No impact to groundwater is expected from the creation of boreholes.
	❖ Noise	Negative	❖ Noise impact from the prospecting equipment will be created.
	❖ Soil	Negative	❖ The disturbance of the soil structure during drilling activities.
	❖ Surface Water	Not applicable	❖ No impact to surface water is expected during prospecting activities.
	❖ Topography	Negative	❖ No impact to the topography is expected from the drilling that will be used by the planned operation
	❖ Visual	Negative	❖ The boreholes will be visible to some extent from the immediate surroundings.
Mining Activity	Potential impact on:	Type of impact	Description

2.2.2 Potential cumulative impacts.

Description	
Air Quality	○ Smoke caused by burning of the harvest stubbles on adjacent irrigation lands. ○ Nuisance dust created by prospecting activities.
Fauna	○ Disturbance and/or destruction of habitat by prospecting activities.
Flora	○ Disturbance and/or destruction of vegetation by prospecting activities.

Ground Water	○ Minimal utilization of groundwater for domestic purposes by the surface owner at his residence. ○ No impact to groundwater by prospecting activities is expected.
Noise	○ Noise created by prospecting activities. ○ Noise created by tractors and combines utilized by the surface owner.
Soil	○ Removal and disturbance of soil structure by prospecting activities.
Surface Water	○ No impact to surface water by prospecting activities is expected.
Topography	• No impact to topography by prospecting activities is expected.
Visual	• Changing of natural view by prospecting activities in some areas.

2.2.3 Potential impact on heritage resources

Not applicable - There are no known areas with a heritage resource on this property however Heritage resources have lasting value in their own right and provide evidence of the origins of the South African society. As these resources are valuable, finite, non-renewable and irreplaceable, they will be carefully management to ensure their survival if any if these sites may be discovered later.

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.)

- There are no communities or individuals in close proximity under application that could be potentially impacted on.

- The only competing land use in close proximity under application is irrigation land if any. The only potential impact to these irrigation lands is the nuisance dust created by the prospecting activities.

- The Prospecting operation will create employment opportunities for the nearby communities.
- For as far as is reasonable practicable, the employer mining will provide and maintain a working environment that is safe and without risk to the health of employees.

- For as far as is reasonably practicable, the employer will provide employees with the information, instruction and supervision that is necessary to enable them to perform their work safely and without risk to their health.
- For as far as is reasonably practicable, the employer will ensure that employees are familiar with work-related hazards and risks and the measures to be taken to minimise such hazards and risks.
- Serviceable and hygienic health and safety equipment will be supplied to every employee, where necessary.
- Employees will be instructed in the proper use, the limitations and the appropriate maintenance of personal protective equipment.
- Each employee will, while at the mine, take reasonable care to protect their own health and safety, as well as that of other persons that might be affected.
- Clean drinking water and proper sanitation facilities will be made available to all employees.
- Awareness on HIV/Aids and TB will be done on the site which will also have a positive impact on the nearby communities because people working on site will be from the Communities and the message will be spread.

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

Letters have been sending by registered mail to the identified interested and affected parties and an advert had been placed in the local newspaper for any other Interested and affected party who might come forward. The Company are awaiting the comments for the above letters and advert.

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

There is no specialist report appended.

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 Assessment of the significance of the potential impacts

3.1.1 Criteria of assigning significance to potential impacts

ASSESSMENT CRITERIA TERMINOLOGY

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 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 life time 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, albeit 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

Mining activity	Impact on	Extent	Duration	Intensity	Probability	Significance
Roads	Air quality	Site	Short	Medium	Definite	Medium
	Fauna	Local	Long	High	Definite	High
	Flora	Local	Long	High	Definite	High
	Noise	Site	Short	Low	Definite	Low
	Visual	Site	Long	Low	Probable	No significance
Drilling	Air quality	Site	Short	Medium	Definite	Medium
	Fauna	Local	Long	High	Definite	High
	Flora	Local	Long	High	Definite	High
	Noise	Site	Short	Low	Definite	Medium
	Soil	Local	Long	High	Definite	High
	Topography	Local	Long	Medium	Definite	Low
	Visual	Site	Long	Low	Definite	No significance
	Fauna	Local	Long	High	Definite	High
	Flora	Local	Long	High	Definite	High
	Noise	Site	Short	Low	Definite	Medium
	Soil	Local	Long	Medium	Definite	High
	Surface Water	Site	Long	Medium	Definite	Medium
	Visual	Site	Long	Low	Definite	No significance

3.1.3 Assessment of potential cumulative impacts.

	Extent	Duration	Intensity	Probability	Significance
Air Quality	Site	Short	Medium	Definite	Medium
Fauna	Local	Long	High	Definite	High
Flora	Local	Long	High	Definite	High
Ground Water	Site	Short	Low	Definite	Low
Noise	Site	Short	Medium	Definite	Medium
Soil	Local	Long	Medium	Definite	High
Surface Water	Site	Long	Medium	Definite	Medium
Topography	Site	Long	Medium	Definite	Medium
Visual	SIte	Long	Low	Definite	Low

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.

- Air quality
- Fauna
- Flora
- Noise
- Soil

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)

Clearing of vegetation for roads and drill sites:

• Existing roads will be identified so that they can be used.

• If new roads have to be constructed, the route shall be selected so that the minimum number of bushes and trees are felled and existing fence lines will be followed as far as possible.

• New access roads will be designed and constructed with appropriate sediment and erosion control, including cut-off berms and trenches.

Drilling:

• Only one prospecting site will be operational at any time

• Drill rigs will be inspected for leaks every day to prevent contaminating of drill sites

• Prospecting areas will be maintained in a clean and tidy condition at all times.

• Precautions will be taken to prevent spills and soil contamination.

Noise and dust:

• All drilling rigs will be fitted with appropriate dust and noise suppression equipment like water sprays and mufflers.

• Drilling activities will be limited to day time to minimize disturbance and inconvenience for affected parties.

• All personnel on site will receive appropriate safety equipment to protect e.g. dust mask, safety glasses and earmuffs.
• Speed limits will be set on dirt roads to limit dust emissions and also prevent degradation of the roads.
• The roads will be sprayed with water to further prevent dust emissions.

Waste (sampling bags, empty containers, etc.):
• Containers will be available for all waste.
• Full waste containers will be removed from the site and taken to an approved landfill site.
• All waste shall be removed from every drill site before moving to the next drill site.

3.2.3 Review the significance of the identified impacts
(After bringing the proposed mitigation measures into consideration).

After re-evaluation of above mitigation measures of all impacts it can be concluded that the impact of the proposed activities on the environment can be regarded as low to medium.

Mining activity	Impact on	Extent	Duration	Intensity	Probability	Significance
Roads	Air quality	Site	Short	Medium	Definite	Low
	Fauna	Local	Long	High	Definite	Medium
	Flora	Local	Long	High	Definite	Medium
	Noise	Site	Short	Low	Definite	Low
	Visual	Site	Long	Low	Probable	No significance
Drilling	Air quality	Site	Short	Medium	Definite	Low
	Fauna	Local	Long	High	Definite	Low
	Flora	Local	Long	High	Definite	Low
	Noise	Site	Short	Low	Definite	Low
	Soil	Local	Long	High	Definite	Low
	Topography	Local	Long	Medium	Definite	Low
	Visual	Site	Long	Low	Definite	No significance

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).

Total prospecting amount cannot be calculated at this stage as most of the activities are dependent on the previous phase/activity results. These includes the cost of cconstruction phase, operational phase and decommissioning phase

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).

Closure objectives:

- The main closure objective of Pico prospecting operation is to restore the site to its current land capability in a sustainable matter.
- 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 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 prospecting area.
- To safeguard the safety and health of humans and animals on the prospecting area.
- The last closure objective is that the prospecting area is closed efficiently, cost effectively and in accordance with government policy.

Regulation 44:

1. *When a prospecting right, mining right, retention permit or mining permit lapses, is cancelled or is abandoned or when any prospecting or mining operation comes to an end, the holder of such right or permit may not demolish or remove any building, structure or object-*

   (a) Which may not be demolished or removed in terms of any other law;

   (b) Which has been identified in writing by the Minister for purposes of this section; or

   (c) Which is to be retained in terms of an agreement between the holder and the owner or occupier of the land, which agreement has been approved by the Minister in writing.

2. The provision of subsection (1) does not apply to bona fide mining equipment, which may be removed.

Rehabilitation of prospecting sites and access tracks:

• Progressive rehabilitation will be undertaken during the operational phase of prospecting. Each prospecting site and associated disturbed areas will be rehabilitated when prospecting at the site has been completed. This will be undertaken while the next prospecting site is being established to ensure that old prospecting sites are rehabilitated as soon as possible.

• All temporary equipment and facilities, e.g. mobile toilet will be removed off site

• All sumps and trenches will be backfilled, compacted and topsoil will be replaced. Drilling fluid used must be biodegradable to avoid contamination of soil and water resources

• Topsoil will be replaced across the disturbed area and shaped to allow a free draining surface.

• An inspection will be held after rehabilitation to determine weed or pest infestation and the necessary corrective action will be implemented

• Cleared vegetation shall be used as brush-cut packing on disturbed areas after rehabilitation to prevent erosion while natural vegetation re-establishes

• All drilling core and cuttings will be removed off site and disposed of at an approved landfill.

• Waste containers will be removed off site and waste will be disposed of at an approved landfill site.

• All survey pegs and flagging tape will be removed where appropriate.

• Where the prospecting site has rendered an area devoid of vegetation or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.

• Access roads will be ripped and graded to match the surrounding landforms or left for the landowner's personal use.

• The affected area will be shaped to ensure effective drainage of storm water and to prevent pounding on site.

• In cases where native vegetation has been removed or damaged and where re-vegetation is required, species endemic to the area will be re-established.

• Photos will be taken of each site before, during and after prospecting at fixed point to be kept on record for inspections.

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 regulation54 (1) in respect of each of the phases referred to).

CALCULATION OF THE QUANTUM

Applicant: **PICO DIAMONDS** — **Location:** **FARM 83**

Date: **Aug-12**

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	10.27	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	143.09	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	210.87	1	1	0
3	Rehabilitation of access roads	m2	1,000.00	25.61	1	1	25610
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	248.52	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	135.56	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	286.18	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	150016.6	1	1	0
7	Sealing of shafts adits and inclines	m3	0	76.82	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	100011.1	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	124562	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	361787	1	1	0
9	Rehabilitation of subsided areas	ha	0	83744.2	1	1	0
10	General surface rehabilitation	ha	0.009	79225.63	1	1	713.03067
11	River diversions	ha	0	79225.63	1	1	0
12	Fencing	m	0	90.37	1	1	0
13	Water management	ha	0	30123.81	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	10543.33	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		26323.03067
1	Preliminary and General		3158.76368		weighting factor 2: 1		3158.76368
2	Contingencies		2632.303067				2632.303067
					Subtotal 2		32114.10
					VAT (14%)		4495.97
					Grand Total		**36610**

4.4 Undertaking to provide financial provision

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

I, Trevor Da Silver Pikwane the sole representative of PICO DIAMONDS (PTY) LTD undertake to provide a Bank Guaranteed Financial Provision of R40 000 should the right am granted.

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

5.1 List of identified impacts requiring monitoring programmes.

- Air quality
- Fauna
- Flora
- Noise

5.2 Functional requirements for monitoring programmes.

- Air quality
  - 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);
  - The Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965) (This Act will be repealed by the national Environment management: Air Quality Act, 2004 (Act No. 39 of 2004);
  - Regulations to the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) – Regulation 64.
  - The Mining Health and Safety Act, 1996 (Act No. 29 of 1996) as amended; and
  - The Occupational Diseases in Mines and Works Act, 1973 (Act No 78 of 1973).

- Fauna
  - Government Notice No. 27306 of 18 February 2006, issued in terms of Section 56(1) of the national Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

- Nature Conservation Ordinance, Ord 19 of 1974.

- Flora
  - The National Forests Act, 1998 (Act No. 84 of 1998), as amended;
  - The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) – Section 7(1);
  - Government Notice No. 27306 of 18 February 2005, issued in terms of Section 56(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
  - Nature Conservation Ordinance, Ord 19 of 1974

- Noise
  - The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) – Section 7;
  - The Mine Health and Safety Act, 1996 (Act No. 39 of 1996) as amended'
  - The Road Traffic Act, 1997 (Act No. 93 of 1997);
  - The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) – Section 34; and
  - Regulations of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) – Regulation 66.

5.3 Roles and responsibilities for the execution of monitoring programmes.

Independent Consultant:

The Consultant will assess the project in the form of Performance Assessment Audits to determine the level of environmental compliance and give recommendations on problem areas.

Ecologist:

The Ecologist will monitor and assess the re-growth of vegetation and also check for alien infestation.

5.4 Committed time frames for monitoring and reporting.

Quarterly reports on fall-out and nuisance dust and noise monitoring will be conducted as required by legislation. The results of these studies will be compiled into annual reports and forwarded to the Principle Inspector of Mine Health and Safety, Department of Mineral Resources, Kimberley.

The fauna and flora will be monitored on an annual basis when the Performance Assessment Report is compiled.

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 main prospecting activities which will require rehabilitation are; roads, surface sample sites and drill sites.

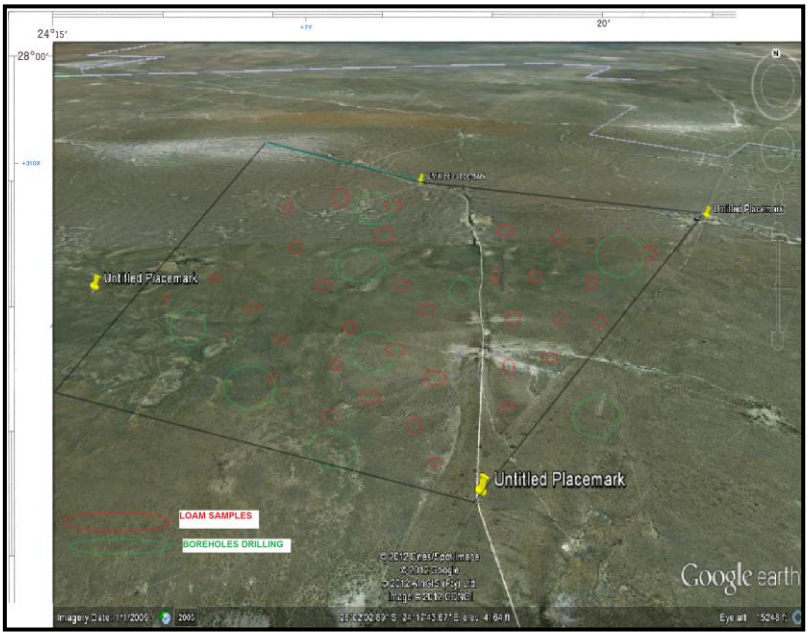

Figure 6 - Rehabilitation plan

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

The intended end use of the land after prospecting operations may be that of mining or the continuation of livestock farming. The intended use of the land after this project will be influence by the outcome and results of the prospecting activities.

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).

Letters have been sending by registered mail to the identified interested and affected parties and an advert had been placed in the local newspaper for any other Interested and affected party who might come forward. The Company is awaiting the comments for the above letters and advert.

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)

7.1.1. Name the community or communities identified, or explain why no such community was identified.

There are no communities residing on the property under application.

The closest communities are Madipelesa about ± 22 km, Shaleng ± 29 km, Mammutla ± 26 km, Losasaneng ± 31km, and Kameelputs ± 30 km from the proposed farm. Boetsap lies North and Warrenton to the east, and Ulco the south of the prospecting area. ± 58 km north of north west of the town Barkly west.

7.1.2. Specifically state whether or not the Community is also the landowner.

There are no communities residing on the property under application. The surface owner of the property under application is the South African government.

7.1.3. State whether or not the Department of Land Affairs has been identified as an interested and affected party.

No the Department of Land Affairs has not been identified as the potential interested and affected party.

7.1.4. State specifically whether or not a land claim is involved.

There is no land claim over the property under application.

7.1.5. Name the Traditional Authority identified.

Not applicable

7.1.6. List the landowners identified by the applicant. (Traditional and Title Deed owners).

There are no traditional land owners on the property under application.

According to Title DeedsT000002783/2011 De Beers consolidated mines transferred the farm 83 to the National Government of the Republic of South Africa.

7.1.7. List the lawful occupiers of the land concerned.

According to the applicant knowledge, National Government of the Republic of South Africa is the lawful occupiers.

7.1.8. Explain whether or not other persons' (including on adjacent and non-adjacent properties) socio-economic conditions will be directly affected by the proposed prospecting or mining operation and if not, explain why not.

Yes. Socio-economic upliftment will take place due to the creation of employment opportunities as well as economic support to the surrounding business community.

7.1.9. Name the Local Municipality identified by the applicant.

Dikgatlong Municipality

7.1.10. Name the relevant Government Departments, agencies and institutions responsible for the various aspects of the environment, land and infrastructure which may be affected by the proposed project.

i. South African Heritage Resources agency (SAHRA): Archaeology and grave yards
ii. Department of Environmental Affairs and Tourism: Conservation
iii. Department of Mineral Resources (DMR): Mineral Law Enforcement and Mine Health and Safety

7.1.11. Submit evidence that the landowner or lawful occupier of the land in question, and any other interested and affected parties including all those listed above, were notified.

The landowner and various other identified interested and affected parties were notified by means of registered post as well as by advertisements that were placed in the Diamond Fields Advertiser (Local newspaper) dated 27 June and 28 June 2012.

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 landowner and various other identified interested and affected parties were notified by means of registered post as well as by advertisements that were placed in the Diamond Fields Advertiser (Local newspaper) dated 27 June and 28 June 2012. A copy of the

Prospecting Work Programme and proposed Environmental Management Plan for their information was also attached.

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

Name	Method of notification / consultation
National Government of the Republic of South Africa.	Registered letter / Advert in newspaper
Surprise Trust	Registered letter / Advert in newspaper
AA Van Wyk Diamonds	Registered letter / Advert in newspaper
Outspan Trust	Registered letter / Advert in newspaper
W.J Du Plessis	Registered letter / Advert in newspaper
W.P Steyn	Registered letter / Advert in newspaper
J.L Schutte	Registered letter / Advert in newspaper
M.Fourie	Registered letter / Advert in newspaper
Dikgatlong Municipality	Registered letter / Advert in newspaper
Lethatmous Plase	Registered letter / Advert in newspaper
Bells Bank Diamond Mine	Registered letter / Advert in newspaper

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

Letters have been sent by registered mail to the identified interested and affected parties and an advert had been placed in the local newspaper for any other Interested and affected party who might come forward. The Company is awaiting the comments for the above letters and advert.

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 or mining operation.

Letters have been sent by registered mail to the identified interested and affected parties and an advert had been placed in the local newspaper for any other Interested and affected party who might come forward. The Company is awaiting the comments for the above letters and advert.

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7.2.5 Other concerns raised by the aforesaid parties.

Letters have been sent by registered mail to the identified interested and affected parties and an advert had been placed in the local newspaper for any other Interested and affected party who might come forward. The Company is awaiting the comments for the above letters and advert.

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

Letters have been sent by registered mail to the identified interested and affected parties and an advert had been placed in the local newspaper for any other Interested and affected party who might come forward.

A public meeting will be scheduled in the near future and records thereof with the minutes will be submitted at the DMR.

7.2.7 Information regarding objections received.

Not Applicable. The public participation is not finish yet.

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

A public meeting will be scheduled were all issues will be addressed and general solutions achieved.

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).

- An environmental, health and safety induction programme will be provided to all employees prior to commencing work, and they will sign acknowledgement of the induction.
- A daily “toolbox talk” will be held prior to commencing work, which will include discussions on health, safety and environmental considerations. The toolbox talks should be led by the site manager.

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).

Stop, mitigate / rehabilitate.

8.3 Environmental awareness training.

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

As part of the prospecting and drilling phase for the project, induction training will be conducted on all people involved in the prospecting project including geologists, drilling crew and relevant technical services, prior to the commencement of any work. Training will involve all the relevant components of the EMP including:

• Access, including use of roads, tracks, gates, etc.

• Control measures required to manage excluded and exempted areas.

• The handling, storage and disposal of waste.

• Fire prevention.

• Sediment and erosion control.

• Control measures to be implemented with regards to the management of water, noise and dust.

• Rehabilitation of borehole sites and access tracks.

- **CONCLUSION**

  The management Pico Diamonds will utilize the Environmental Awareness Plan to assure that all employees and contractors are aware of the environment and know how to manage it correctly.

  - 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 must 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.

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)

It is not foreseen that rehabilitating core drill holes will exceed R1 500 per hole, the total cost for rehabilitating all core holes will be less than R15 000. The samples will be used to backfill the RC drill holes and the cost is included in the funds available for RC drilling.

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

The amount required for rehabilitating the holes are included in the funds set aside for RC and core drilling on the Prospecting Work Programme.

10 REGULATION 52 (2) (h): Undertaking to execute the environmental 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	**TREVOR PIKWANE**
Identity Number	**500803 5127 081**

-END-