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ENVIRONMENTAL MANAGEMENT PLAN FOR PROSPECTING RIGHT OF COPPER AND DIAMOND (IN KIMBERLITE) COVERING PORTION AND THE REMAINING EXTENT OF THE FARM KAALFONTEIN 513 JR, IN THE MAGESTERIAL DISTRICT OF CULLINAN IN GAUTENG PROVINCE

REFERENCE NO: GP 30/5/1/1/2 (10316) PR

kimopax (Pty)Ltd

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Project no	Report no	Date	Status
Kim0115-004	Kim0115-004	January 2015	Final

27 January 2015

Conducted on behalf of:

Randquip Pty Ltd

Attention:

Compiled by:

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Mutshena Mpho

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mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: RANDQUIP (PTY) LTD

REFERENCE NUMBER: GP 30/5/1/1/2 (10316) 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.

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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.

Figure 1: Google image showing the environment surrounding the application area

Air quality

Air quality is the degree to which the air in a particular place is pollution free. With regard to this project that is to take place air pollution can caused by the movement of heavy earthmoving equipment's which can generate dust and cause nuisance and health implications to the workers and people leaving nearby. To minimise dust from generating vehicle speed on gravel road will be limited to 20 km/hr. All equipment's on site will be maintained in a good working order, prospecting activity will be restricted to day light hour

Climate

In Bronkhorstspruit, the climate is warm and temperate. In winter, there is much less rainfall than in summer. The average annual temperature in Bronkhorstspruit is 16.8^0C. The rainfall here averages 677 mm

Flora

The area in question may be described as natural grassland and classified as the central variation of the Transvaal Bankenveld. Any trees present within the immediate region vary from farm to farm, with little diverse vegetation being present due to the clearing of land surface for agricultural purpose. Natural occurring grasses are sour and wiry with the dominant species being narrow Heart Love Grass, Purple Finger Grass, Creeping Brittle Grass and Wire Grass

Purple finger grass on site

Fauna

The site upon which the proposed prospecting project is to take place is largely devoid of any medium to large animals except for the cattle from the farm upon

which the prospecting is to take place. A number of smaller animals typically associated with rural areas and land zoned for agriculture would be found on-site, including rodents i.e. rats and field-mice, lizards, grasshoppers, various beetles and the associated avifauna which prey upon these

Geology

The site is underlain by formation of belonging to the Pretoria group of the Transvaal sequence. The southern part of the site is underlain by the Silverton formation consisting of Shale with inter-bedded quartite, hornfels and limestone The Silverton Formation is intruded by diabase dykes and sills. This diabase intusion are very prevalent and certain stratigraphic levels below the Bushveld igneous complex in the Pretoria Group and the majority is found in the Silverton and Strubenkop formation. Shale is silty and locally graphitic with thin interbeds of limestone. This material comprises with soft to hard, olive grey to yellow brown, well bedded, very closely jointed, fine grained, moderately to highly weathered rock which is usually characterised by outcrops.

Noise

The only sources of noise are from the traffic on the farm roads transecting the property and also the R515 that goes to Cullinan.

The proposed operation will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulation as well as other applicable legislations regarding noise control. Employees will be supplied with ear plugs.

Cultural Heritage

The proposed activities will not change the character of the area or result in significant impacts on heritage resources. There are no known cultural or heritage features in the application are. However, if any heritage resources, including graves or human remains are encountered the prospecting activities will stop until necessary precautions are taken

Protected Areas

There are no recognised protected areas near the drilling area

Hydrology

There is a wetland on South-Western boundary of Portion 45 of Kaalfontein.

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

Soil

There will be disturbance of soil due to the oil spillages and other activities that will be taking place on the proposed prospecting area. Preventive measures to be taken include the following;

- The use of oil drip trays on leaking vehicles and equipment
- No major vehicle repairs should be done on site
- Oils and fuel should be stored on bunded areas to avoid spillages
- An emergency plan for spillages should be available on site.
- Should any spill occur it shall be reported immediately for investigations and clean-ups and if necessary contaminated soil shall be removed from the area

Air quality

Dust pollution due to vehicles on site is possible but should be limited by vehicles travelling three or four times to and from the site using a minimum speed of 20 km/h. Spraying of water to suppress dust in the prospecting area

Noise

The main source of noise will be from the drill machine. Noise levels at the site is anticipated not to exceed 85dB, but however the noise level surveys should be undertaken to determine and demarcate the noise zones.

Flora and Fauna

Only areas demarcated for bulk sampling should be cleared of vegetation, firewood harvesting and animal hunting should not be allowed on site.

Surface Water

There is a wetland on portion 45 of the Farm Kaalfontein. A buffer distance of 500m will be kept to mitigate contamination.

Part of the wetland as seen from the farmhouse.

Topography

There will not be any detrimental effects to the topography of the area.

Heritage/cultural resources

In the farm to be mined there are no sites of archaeological and cultural value.

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

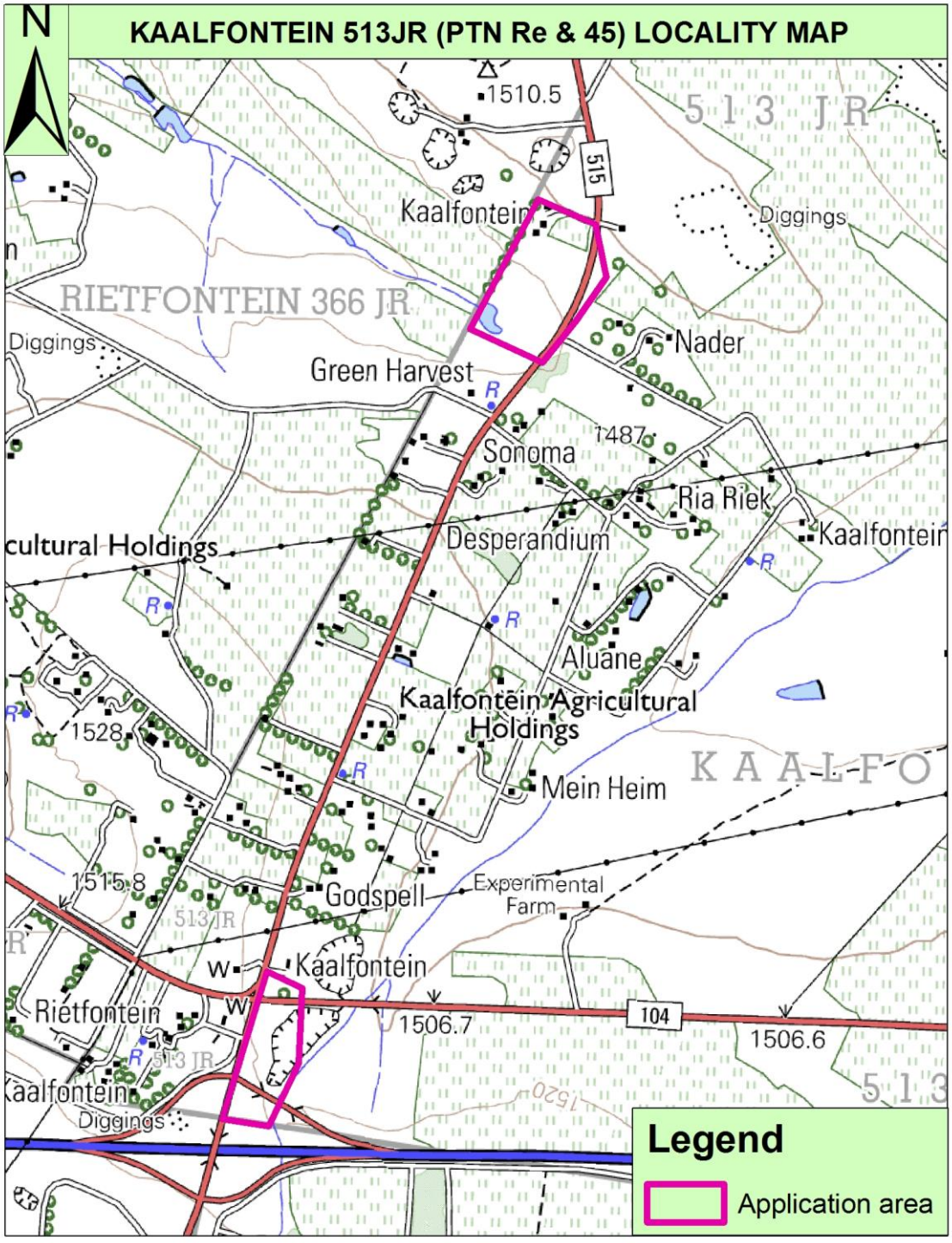

Figure 2: Topographical Map

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

Public participation process (PPP) is required for all the required licenses and authorisations for the project. Through (PPP), those affected by and interested in the proposed development will have an opportunity to raise issues and contribute

To ensure that people are registered as I&AP and provided with opportunity to comment registration and comment form were provided for the community to fill in. That will also enable them to continuously receive more information and the updates about the projects

Consultation documents have been compiled for distribution to the interested and affected parties so that they can be aware of the project which is to take place. The documents compiled include: The Background Information Document (BID), site notice, and the newspaper advert. Kimopax (Pty) Ltd consulted the adjacent landowners who raised no objection to the proposed activity.

On-going consultation with key stakeholders (e.g. local authorities, relevant government departments, local business), and other identified I&APs will ensure that I&APs are kept informed regarding the project and proposed mitigation measures. Networking with I&APs will effectively continue throughout the duration of the project until the closure of the project phase, where required, key stakeholders and I&APs will be engaged on an individual basis throughout the project. The database and issues trail will be continually updated throughout the process.

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 activity

This project will involve the following prospecting methods:

- Field Mapping
- Geophysical survey
- Drilling
- Sampling
- Bulk sampling

Field Mapping method-include the identification of exposed geological structures and lithological outcrops, through aerial photo interpretation, satellite image interpretation and also by walking the farms/folios.

Geophysical survey- ground gravity surveys will be applied in order to outline ore deposit positions and size accurately. Ground gravity survey is carried out on a grid layout. The grid is placed in the field through the use of total station or real time GPS system. Gravity readings and accurate elevation are recorded at each station on the grid. The gravity data will be evaluated by means of diamond core drilling. The Ground geophysical surveys will be conducted over selected target areas on a 200m x 200m grid. Ground gravity survey is used to outline the ore hosting lithology

Drilling- A proposed drilling programme of boreholes will be used to further define the ore body. The drilling programme will determine the exact outline, shape and size of the ore body. The core drilling is generally done in this target. The different rock sample intersecting the deposit will be sent for assay at one of the accredited laboratories. Diamond core drilling- this will be done in phases, as outlined elsewhere, over anomalous target areas, using reconnaissance lines or grid of 100m or 400m x 400m holes will be approximately 50m deep depending on the local depth. The drill holes will be sent to the laboratory for assay.

Bulk sampling- once a kimberlite is confirmed, bulk sampling is conducted to

evaluate the economic potential of the deposit. This is carried out in three stages i.e. Microdiamond sampling, Character sampling and the True bulk sampling. **Microdiamond sampling** involves collecting samples 20 to 70kg in size and subsequent laboratory processing. The purpose of sampling for microdiamond is to provide an initial evaluation of the characteristics of the microdiamond population where as in character sampling stage 100 to 500 of materials are collected and processed

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

As it was outlined earlier the prospecting operation will be carried out in terms of different phases.

Access Roads

Existing access roads will be used during sampling phase, should drilling becomes necessary it will depend on the mineralisation where the activity would take place. Should it require constructing access roads that will be done in the consultation with the affected parties.

Topsoil Storage

No topsoil storage site would be required. Limited volumes of topsoil will be stored adjacent to the relevant activity (drilling area) for immediate replacement after drilling had been finished

Construction Camp

No construction camp will be established. Ablution facilities from the farmhouse will be utilised by the contractor

Water supply

Water from the farmhouse will be utilised for all the water requirements

Storage of dangerous goods

During the diamond drilling and bulk sampling activities limited quantities of diesel fuel, oil and lubricant will be stored on site. A farm warehouse will be used for storage.

Blasting

Bulk sampling activities may require minimal blasting to be undertaken if an indurated calcrete layer is encountered above the Kimberlite. All of the hard-rock sampling will be drilled and blasted using conventional open pit drilling equipment and explosive

DESCRIPTION OF NON-INVASIVE ACTIVITIES

Desktop Study

This will comprise of gathering geological information about the project are. It will also include visiting organisations like the council of geoscience in order to research on what has been done in the region. And it will take about the whole month to complete

Field Mapping

It mainly consist of a comprehensive field mapping, geologist will complete properly selected transverse while recording their geological observations.

Geophysical Survey

Mainly consist of a comprehensive ground gravity survey to delineate magnetic anomalies and potential target area

Preliminary Drilling and Assaying

It consists of reconnaissance drill. The proposed drilling program consist of 10 holes

Detailed drilling and assaying

Consist of detailed diamond core drilling within the determined target areas, to delineate the ore body accurately, and determine depth to bedrock and internal stratigraphic composition of the body

Geological Modelling

This will be comprised by detailed geological modelling

DESCRIPTION OF PLANNED INVASIVE ACTIVITIES

These activities result in land disturbances e.g. sampling, drilling, and bulk sampling

Drilling

This will involve both diamond core drilling; the drilling equipment mounted on heavy truck will be used. All means will be done to reduce the environmental damages. Purpose of the drilling activity will be to collect sample to be tested at the laboratory

DESCRIPTION OF PRE-/FEASIBLILITY STUDIES

Activities in this section include but are not limited to: initial, geological modelling, resource determination, possible future funding model, etc. Geological modelling and resource evaluation will be done using the computer software supac version 6.

2.1.2 Plan of the main activities with dimension

Each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of Phase 1 assessment, an airbone geophysics survey and/or loam sampling programme will be initiated. Target that have been priotized through detailed anomaly-specific loam sampling and ground geophysics will be tested by initial diamond drilling.

If Kimberlite is intersected, one or more 10kg samples will be taken for sampling and the results will be interpreted to assess diamond potential. Dependant on the results, further delineation drilling and micro-diamond sampling would be carried out to further define the deposit and give a better indication of grade. Positive results from micro-diamond would be followed by detailed delineation drilling and

geological modelling. Should the deposit indicate a sufficient size and diamond potential from micro-diamond sampling to make it potentially economically viable, an appropriate bulk sampling programme will be undertaken in order to confirm grade, diamond quality and size frequency distribution.

2.1.3 Description of construction, operational, and decommissioning phase

Phase		**Activity**
Desktop Study	Planning phase	During this phase, information of the site and surrounding areas will be collected in order to obtain a clear understanding of the project area and the aspect that may have an influence on it. This will include the update of the database, checking and validating data. The data will then be interpreted to plan for the prospecting programme
Soil Sampling	Construction phase	No construction or site establishment activity will be required
	Operational phase	Soil sampling will be undertaken at identified site in accordance with the following methods: • Site access will be gained through the use of existing roads and/or tracks • In instances where access cannot be gained to the identified site via establishment roads and tracks, vehicles access will be gained to sampling site through the veld and establishment of tracks to gain repeated access to a soil sample site will not be required
	Decommissioning phase	No decommissioning activity will be required

Drilling	Construction phase	Site access will be gained through the use of existing roads and/or tracks. In instances where access cannot be gained to the identified site via established roads and tracks, vehicles access to the drill site will be gained through the establishment of access tracks. No formal road construction activities will be undertaken. Site establishment will include: • Vegetation clearing of drill pad area • Topsoil stripping and stockpiling • Erection of temporary site office shaded area, potable ablution faculties and water storage tanks
	Operational phase	Exploration drilling; and core sampling collection and storage
	Decommissioning phase	Removal of temporary site office shaded area, potable ablution faculty and water storage tanks. Drill pad rehabilitation will include: • Ripping of drill pad • Re-spreading of stockpiled topsoil and revegetation
Bulk sampling	Construction phase	Site access will be gained through the use of existing roads and/or tracks. In instances where access cannot be gained to the identified site via established roads and tracks, vehicles access to the drill site will be gained through the establishment of access tracks. No formal road construction activities will be undertaken. Site establishment will include: • Vegetation clearing of drill pad area • Topsoil stripping and stockpiling • Erection of temporary site office shaded

		area, potable
	Operational phase	Bulk sampling will be drilled and blasted if necessary using conventional open pit drilling equipment and explosive
	Decommissioning phase	Removal of temporary site office, potable ablution faculties and water storage tanks. Site rehabilitation will include: • Ripping of compacted areas • Re-spreading of stockpiled topsoil and Revegetation • Sample pit backfilling

2.1.4 Listed activities (in terms of NEMA EIA regulation)

The proposed mining activities will not involve any construction or development which will trigger registration and approval of such activities before they can be commenced with as required in terms of NEMA 2006 and 2010 EIA Regulations. Should there be a case wherein such listed activities are required, the EMP will be amended and submitted to the DMR for approval.

2.2 Identification of potential impacts

2.2.1 Potential impacts per activity and listed activities.

Activity	Description	Affected Environment	Potential Impact
PROSPECTING PHASE			
Construction and Upgrading of Access	If the need arise for access roads,	Soil	Increased erodibility of soils due to the removal of vegetation.

Roads	consultation will be done with adjacent landowners before construction starts.	Natural Vegetation	Destruction and removal of natural vegetation during site clearance.
		Surface Water	Potential siltation of surface run-off due to soil erosion.
		Air Quality	Increased potential for dust emission due to wind erosion.
Transportation of Equipment	The drilling operation will involve transportation of equipment to the project area.	Soil	Soil compaction due to the repetitive movement on gravel roads.
		Interested and Affected Parties	Potential damage to roads caused by movement of heavy vehicles and continual use of vehicles moving to and from the site.
		Air Quality	Increased dust emissions due to entrainment of dust particles by the movement and operation of construction equipment.
Construction of surface infrastructure and trenching	This will involve vegetation clearing and topsoil removal to construct offices, a change house, etc.	Soil	Permanent compaction of soil in areas of infrastructure construction
		Land Capability	Decreased land capability due to damage to the natural soil structure, soil loss through wind and water erosion and leaching of soil nutrients.
		Natural Vegetation	Disturbance of vegetation could result in soil erosion due to exposed soils.
		Surface Water	Altered surface flow dynamics around surface infrastructure; Potential contamination of

			surface water due to spillage of drill fluids.
		Groundwater	Potential groundwater contamination due to infiltration of drill fluid contaminated water.
		Air Quality	Dust from construction vehicles on gravel and secondary roads.
Topsoil Removal and Stockpile	It is assumed that the topsoil height averages 1.5 m over the disturbed area. The topsoil stockpile is tentatively located in an area south – east of the contractor's surface facilities.	Topography	Alteration of the local topography and disturbance of natural drainage lines.
		Visual	The creation of stockpiles alters the visual quality of the landscape.
		Soil	Damage to the natural soil structure due to soil handling, removal and mixing of soil types and horizons; removal of vegetation causes a change in the water runoff characteristics of the site and increased probability of soil erosion. This leads to the loss of topsoil and an increase of siltation in the streams and rivers with the runoff carrying sediment; and Leaching of soil nutrients during long-term stockpiling.
		Land Capability	Decreased land capability due to damage to the natural soil structure, soil loss through wind and water erosion and leaching of soil nutrients.

		Natural Vegetation	Damage to natural vegetation due to deposition of dust emitted during the tipping and stockpiling, restricting photosynthesis.
		Animal Life	Potential direct impacts on threatened fauna species; Habitat disturbance and destruction; Potential disruption on birds nesting, foraging or roosting in project area.
		Surface Water	Altered surface flow dynamics due to alterations in the onsite topography; and increase of siltation in the streams and rivers with the runoff carrying sediment
		Air Quality	Increased potential for dust emissions due to wind erosion during the tipping of soil into trucks and onto stockpiles, as well as exposure of stockpiles to wind erosion; and Potential increase of dust generation.
		Noise	Potential increase of noise of hauling trucks to topsoil stockpile site.
Placement of a fence	A fence will be constructed around the exploration site which will be limited to the	Animal life	Potential limitation of movement for domestic animals to grazing areas. This is a positive impact as it will prevent movement of domestic animals into

	demarcated area to protect the workings and prevent people and domestic animals from harm		demarcated areas, thus preventing injury.
		Interested and Affected Parties	The fence could prevent access to communal agricultural fields and livelihood. Also, the fence will provide a safety factor, preventing access to areas where safety risks may occur.
Storage of Fuel	Diesel fuel usage for the drilling activity will be stored at the farm warehouse.	Soil	Potential soil contamination.
		Land Capability	Potential decreased land capability due to contaminated soil.
		Natural Vegetation	Potential damage due natural vegetation and loss due to spillages of hydrocarbons, chemicals and explosives.
		Animal Life	Potential injury or loss of animals due to spillages of hydrocarbons, chemicals and explosives.
		Surface Water	Potential contamination of surface water due to the spillage of hydrocarbons, chemicals and explosives or contaminated run-off sourced from contaminated soil.
		Groundwater	Potential groundwater contamination due to the infiltration of surface water contaminated with spilled hydrocarbons, chemicals or explosives.
OPERATIONAL PHASE			

Drilling of boreholes	Boreholes will be drilled with a diamond drill core rig. A trench will be dug or a berm will be constructed around each prospecting site to divert clean water around the prospecting site for sediment and erosion control.	Natural Vegetation	Disturbance of vegetation could result in soil erosion due to exposed soils.
		Animal Life	Disruption of animal habitats such as nests and breeding grounds (potential modification, fragmentation, and reduction of habitat).
		Surface Water	Potential contamination of surface water due to spillage of drill fluids.
		Groundwater	Potential groundwater contamination due to infiltration of drill fluid contaminated water.
		Air Quality	Dust from construction vehicles on gravel and secondary roads.
		Noise	Potential elevated noise levels in the surrounding environment.
Use of Hydrocarbons and Chemicals	The use of hydrocarbons, chemicals and explosives will take place and these will be stored on site in designated storage areas.	Soil	Potential soil contamination.
		Land Capability	Potential decreased land capability due to contaminated soil.
		Natural Vegetation	Potential damage due natural vegetation and loss due to spillages of hydrocarbons, chemicals.
		Animal Life	Potential injury or loss of animals due to spillages of hydrocarbons, chemicals.

		Surface Water	Potential contamination of surface water due to the spillage of hydrocarbons, chemicals or contaminated run- off sourced from contaminated soil.
		Groundwater	Potential groundwater contamination due to the infiltration of surface water contaminated with spilled hydrocarbons or chemicals
Access Roads	Roads will be used to access the site and to transport equipment onto and off the site.	Soil	Site clearing to construct road will cause a potential to result in soil erosion, soil loss.
		Land Capability	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads
		Natural Vegetation	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads; Site clearing and removal of topsoil could lead to soil erosion and soil loss.
		Surface Water	Altered surface flow dynamics due to removal of topsoil and topographical alterations and increased surface runoff from

			cleared areas; Potential surface water runoff over haul roads will result in erosion and consequent siltation of surface water resources; Potential contamination of surface water runoff from hauls roads due to the spillage of hydrocarbons from vehicles travelling on haul roads.
		Air Quality	Potential dust pollution caused by construction vehicles
		Noise	Potential elevated noise levels due to continuous vehicular movement on haul roads.
		Interested and Affected Parties	Potential damage to roads could impact safety of people and animals.
DECOMMISSIONING AND CLOSURE			
Rehabilitation	All areas disturbed will be rehabilitated to its original state with the waste rock and topsoil stockpiles. Roads should be ripped Or ploughed and fertilised if necessary to promote re-growth of vegetation.	Soil and Vegetation	Positive impact as topsoil will be replaced to enhance vegetation growth.
		Animal Life	Positive impact as vegetation will re-establish itself and the natural Fauna will gradually return to the rehabilitated sites.

2.2.2 Potential cumulative impacts.

	DESCRIPTION
Air quality	Currently, the only dust causing activity in the area is the vehicular activities on the gravel roads as well as agricultural activities. Dust is also generated by agricultural activities such as tractors used for ploughing as well as vehicles moving up and down of an unpaved road. This can be limited by spraying of the gravel road on the prospecting site and the speed limit
Fauna	Disturbance and destruction of habitat. Some of the animals will lose their habitat due to the prospecting activity , some will be killed by the moving vehicles working on site
Flora	Disturbance of vegetation due to the clearance for establishment of road and drilling site
Ground Water	There is a potential for mining activities to affect groundwater regionally. Possible contribution of groundwater contamination includes spillages hydrocarbons sourced from trucks and machinery, ablutions and domestic waste. The total cumulative impacts are low as this will be limited to the site.
Noise	Vehicular activities on the gravel roads as well as agricultural activities from surrounding farms contribute to the noise levels. Cumulative impacts are expected to be significant due to surface excavation activities. Trucks and constructing machinery could also

	contribute to the noise levels. Thus, the total cumulative impacts are expected to be low
Soil	The mining activities involve the removal of topsoil. Soil pollution from the use of hydrocarbons spillages may occur. Thus, the activities will result in a potential increase in soil contamination and reduce the potentially arable land. The cumulative impacts on soil will be insignificant on the regional scale as impacts on soils are contained on site. The total cumulative impacts on soils will be highly significant if more industrial, commercial agriculture and mining operations commence in the area without adequate rehabilitation. Thus, the activities will result in a low significance cumulative impact only being limited to the site and its immediate surroundings.
Surface water	No impact is expected as a buffer of 500m will be kept.
Topography	There will be potential changing of natural slopes by prospecting activity.
visual	The mining activities will have a slight impact on the visual aspect. There are, however, extensive existing impacts on the visual aspects of the area due to the presence of, roads, and other human activities. Thus, the total cumulative impact is therefore medium
Traffic	The movement of prospecting vehicles will cause disturbance if their time and speed is not limited

2.2.3 Potential impact on heritage resources

The area in question is of no significant heritage resources and no impacts regarding heritage resources are expected. However, should heritage resources be discovered during mining activities, the area which has such resources will be excluded from the proposed prospecting activity. The necessary processes as required by the South African Heritage Resources Agency will be followed as stipulated in terms of the provisions of the National Heritage Resources Act, 1999 (Act 25 of 1999).

Randquip (Pty) Ltd understand the issues around National and Cultural Heritage Sites. According to National Heritage Resources Act, 1999 (Act No. 25 of 1999), National Heritage Sites include sites of archaeological and paleontological significance or burial sites and public monuments and memorials. The following are the standards on the protection of national heritage resources:

- The prospective miners must before commencing prospective mining activity, ascertain whether the designated site does not include a heritage site.
- National heritage sites must not be destroyed, damaged, excavated, altered, or defaced without a permit.
- Demolishing of building older than 60 years is subjected to approval - National Heritage Resources Act, 1999 (Act No 25 of 1999).

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

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

Impacts on Communities: This project will create jobs, roads, schools, and also increase the demand of goods and services in the affected area/s in the long term. The applicant intends to involve the communities affected by the project when making important decisions. This will avoid

cases where the communities feel that they are being unfairly treated or inadequately compensated because this can lead to social tension and violent conflicts.

People from local communities will be given first preference when employment opportunities arise. If the required skills are not available in the affected areas, people from other areas might be appointed to work for the applicant during the implementation of the approved mining work programme. They will not work full time in the area. When they are in the area better accommodation will be arranged for them ensuring that their families can be able to visit them, and hence the local B&Bs or other accommodation providers will benefit.

Providing better accommodation for the employees will reduce cases were employees get involved in relationships (sexual) with local people mainly because they cannot be able to accommodate their families in houses provided/arranged by the employer. And this will also help in reducing unwanted pregnancies and also reduce the spread of sexually transmitted diseases. The leaders in the community will be notified of their presence in the area.

The conditions of roads and other infrastructures in the area might also be improved if the project is implemented. This will be done after consultation with the communities and the local municipality concerned. Projects implemented by the community for the benefit of the entire community (i.e. Youth Training Programmes; ABET and Environmental awareness) might receive support from the project.

Impacts on individuals: The project has the potential to improve the living standard of people living in and around affected communities. This is because the proposed mining project has the potential to create jobs for the locals. These people will also be given opportunities to gain experience in the field of mineral exploration and this will enable them to get better

jobs in the mining industry which in turn will help in reducing the poverty levels.

Businesses offering accommodation and catering services will benefit from the proposed operation because people from outside the project area who will be involved in the project will require their services and as such increasing the income or profits of the said businesses.

Impacts on competing land uses: Small businesses like street vendors, car washes, and open markets might be affected if dust control measures are not implemented correctly resulting in dust covering their goods and foods on sale.

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

Kimopax Pty Ltd confirms that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties.

2.2.6 Confirmation of specialist report appended.

(Refer to guideline)

There is no specialist report appended as the proposed mining activities will not result in major negative impacts.

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.

Activity	Affected Environment	Potential Mitigation and Management
Drilling	Soil	• The topsoil removed should be stored within a an area on higher ground of the prospecting area, outside the 1:100 000 flood level, but within the boundaries of the project area; • Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; • Storage of used oil/ grease should be done in a designated bunded area until removal; • During rehabilitation, soil should be replaced in a manner that will promote the natural growth of vegetation.

	Land Capability	• Mining sites should be rehabilitated to ensure excavations are filled; • Soil should be replaced in a manner that will promote natural growth of vegetation; • Soils forming part of the overburden should be stockpiled separate from rock; and • Drip trays and designated bunded sites should be used to protect soils from hydrocarbons used during surface excavations.
	Surface water	• Storage of used oil/ grease should be done in a designated bunded site until removal; and • Water courses should be avoided. Prospecting should not take place within 100m from a water source.

	Air quality	• Dust emissions from trucks and bakkies on dusty roads will be suppressed by water spraying.
	Natural Vegetation	• No unnecessary disturbance of vegetation during mining activities, thus, the removal of vegetation should be limited; • Rehabilitation should be done to promote natural vegetation establishment; • Promotion of environmental awareness to employees; and • Identification of sensitive species and habitats which need to be avoided should be done
	Animal life	• Promotion of environmental awareness to employees; • Identification of

		sensitive species and habitats which need to be avoided; and • There should be no unnecessary disturbance on animal habitats such as nests and breeding grounds.
	Archaeology/Heritage Resources	• Heritage sites within 25 m from any mining area should be clearly marked to prevent any accidental damages.
	Noise	• Noise will be generated and should be restricted to the hours between sunrise to sunset and should not be commenced after these hours. Some settlements may be in close proximity to the operation, but it is unlikely that they will be severely impacted on in terms of noise.
Construction of mining structures.	Topography	• There should be no unnecessary clearing of vegetation and topsoil clearing; and

		• Construction machinery and equipment should be stored away from surface water and drainage lines.
	Visual	• The impact has a potentially medium probability and cannot be avoided or prevented.
	Soil	• An accurate soil map showing soil classification, thickness and fertility status should be compiled in order to determine the type of soil found in the area to determine the way soil should be stockpiled after removal; • The topsoil removed for this activity should be stored within an area on higher ground of the mining area, outside the 1:100 000 flood level, but within the boundaries of the project area; and • Oil spills should be

		cleaned up immediately
	Land capability	• Topsoil stockpile heights should not exceed pre-determined height restrictions; and • Topsoil should be stockpiled for use during rehabilitation and these stockpiles should be allowed to naturally vegetate to result in the stabilisation of soil particles and to prevent erosion.
	Surface water	• Only release water if quality is acceptable.
	Air quality	• On windy days, especially during spring between the months of September and October, wind can carry dust over a wider area. Dust suppression by means of a water cart should be conducted on a daily basis.
	Natural vegetation	• No trees should be cut for fire wood; • Fires should only be

		made in a dedicated area cleared from vegetation; • Vegetation should not be removed unnecessarily; and • Identification of sensitive species and habitats which need to be avoided should be conducted.
	Animal life	• Identification of sensitive species and habitats which need to be avoided should be conducted.
	Archaeology/Cultural Heritage	• Heritage sites within 25 m from any drilling, blasting or mining area should be clearly marked to prevent any accidental damages
	Noise	• The mining times should be communicated to the local communities. • Communities should be able to file complaints regarding the noise; and
Storage of	Soil	• Drip trays and

hydrocarbons, chemicals		designated bunded sites should be used to protect soils from hydrocarbons used; and • Storage of used oil/ grease should be done in a designated bunded site until removal.
	Land capability	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; and • Storage of used oil/ grease should be done in a designated bunded site until removal.
	Surface water	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; and • Storage of used oil/ grease should be done in a designated bunded site until removal.
	Groundwater	• Drip trays and designated bunded sites should be used to protect soils from

		hydrocarbons; and • Storage of used oil/ grease should be done in a designated bunded site until removal.
	Natural vegetation	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; and • Storage of used oil/ grease should be done in a designated bunded site until removal.
	Animal life	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; and • Storage of used oil/ grease should be done in a designated bunded site until removal; and • The storage area should be securely fenced.
Fence	Visual	No mitigation is possible.
	Animal life	• No mitigation is required. This is seen as a positive.

Removal and storage of topsoil (Topsoil stockpile)	Soil	• Topsoil should be removed from all areas where physical disturbance of the surface area will occur; • The topsoil removed should be stored in an area on high ground in the project area outside the 1:50 flood level and should be protected from being blown away or being eroded; • Topsoil should be kept separate from subsoil and should not be used for building or maintaining access roads; • Vegetate with diverse grass mix to control erosion; and • Topsoil fertility, biological quality should be monitored and a management plan should be implemented.
	Land capability	• The topsoil removed should be stored in an area on high ground in

		the project area outside the 1:50 flood level and should be protected from being blown away or being eroded for use for rehabilitation of site; • Topsoil should be removed separately from sub- soils and should be stockpiled separately; and • The stockpile should be grassed to protect the topsoil from wind and rain.
	Visual	• Topsoil should be stockpiled in a designated area.
	Topography	• Vegetation should be removed prior to topsoil removal in order to limit the effects of site clearance on surface water flow dynamics.
	Surface water	• Vegetation should be removed prior to topsoil removal in order to limit the effects of site clearance on surface water flow dynamics;

		and • Topsoil stockpiles should be allowed to naturally vegetate in order to stabilise soil particles and prevent erosion, thus limiting siltation of surface water.
	Air quality	• Topsoil stockpiles will be allowed to naturally vegetate in order to stabilise particles and reduce the risk of wind erosion.
	Natural vegetation	• Vegetation should be removed prior to topsoil removal in order to limit the effects of site clearance on surface water flow dynamics.
	Animal life	• Identification of sensitive species and habitats which need to be avoided should be conducted prior to topsoil removal.
	Archaeology/Cultural	• Heritage sites within

	Heritage	25 m from any prospecting area should be clearly marked to prevent any accidental damages.
	Noise	• Tipping of topsoil into stockpiles should occur between sunrises to sunset.
Transport of equipment and vehicle and equipment maintenance	Soil	• Vehicles and machinery should be adequately maintained to prevent leaks resulting in soil contamination.
	Land capability	• The vehicle maintenance yard should be established outside the flood plain, above the 1 in 50 flood level within the project area;
	Surface water	• Vehicles and machinery should be adequately maintained to prevent spillages resulting in surface water contamination. • Should spillage occur implement

		appropriate clean up immediately
	Groundwater	• Vehicles and machinery should be adequately maintained to prevent spillages resulting in groundwater contamination. • Should spillage occur implement appropriate clean up immediately
	Air quality	• Dust on roads should be suppressed with the use of water by a water cart truck.
	Natural vegetation	• Vehicles should be restricted to the roads.
	Animal life	• Vehicles should be restricted to the roads to prevent habitat disturbance of birds and animals.
	Archaeology/Cultural Heritage	• Heritage sites within 25 m from any mining area should be clearly marked to prevent any accidental damages.
	Noise	• Vehicular movement

		should be restricted to sunrise and sunset. • Speed limits of 10km/h should be exercised.
Construction of surface infrastructure	Soil	• Topsoil should be removed from all areas where physical disturbance of the surface will occur; • The topsoil removed for this activity should be stored within an area on higher ground of the mining area, outside the 1:50 flood level, but within the boundaries of the project area; and • Oil spills should be cleaned up immediately
	Topography	• There should be no unnecessary clearing of vegetation and topsoil clearing; • Drilling machinery and equipment should be stored away from surface water and drainage lines; and • Surface infrastructure should be established outside the flood plain, above the 1 in 50 flood

		level mark in the project area.
	Land capability	• This should involve the least disturbance to vegetation; and • Topsoil should be removed from all areas where physical disturbance of the surface area will occur.
	Surface water	• Surface infrastructure such as offices and camps should not be located closer than 100 metres from any water courses. • No construction within the 1:50 year floodline • Implement stormwater control measures to separate clean and dirty water run off
	Groundwater	• Spillages should be cleaned up immediately.
	Air quality	• On windy days, especially during spring between the months of September

		and October, wind can carry dust over a wider area, thus dust suppression by means of a water cart should be conducted on a daily basis to reduce dust emissions.
	Natural vegetation	• No trees or shrubs should be felled or damaged; and • Open fires should not be allowed.
	Animal life	• Identification of sensitive species and habitats which need to be avoided or re-located should be conducted.
	Archaeology/Cultural Heritage	Heritage sites within 25 m from any development area should be clearly marked to prevent any accidental damages.
	Noise	• Drilling, blasting or mining activities should be restricted to between sunrise and sunset.

Waste generation, disposal and sewage handling	Soil	• Accidental spillages should be cleaned up immediately; • Waste such as glass bottles, plastic bags, metal scrap etc. should be separated and stored in a bin/ container for recycling purposes.
	Land capability	• Accidental spillages should be cleaned up immediately;
	Surface water	• Accidental spillages should be cleaned up immediately;
	Groundwater	• Accidental spillages should be cleaned up immediately;
Ablution	Soil	• Accidental spillages should be cleaned up immediately with the use of saw dust and placed in a 25 L container to be treated as hazardous waste; • The contents of the chemical toilets should be emptied on a regular basis to prevent spillages.

	Land capability	• The contents of the chemical toilets should be emptied on a regular basis to prevent spillages.
	Surface water	• The contents of the chemical toilets should be emptied on a regular basis to prevent spillages.
	Groundwater	• The contents of the chemical toilets should be emptied on a regular basis to prevent spillages.
Domestic Waste	Soil	• Separation of general waste and classification of waste to ensure reuse and recycling of waste as per the new Waste Management Act, Act 58 of 2008; and • No general waste is to be burnt or buried on site;
	Visual	• Construction workers should not be allowed

		to litter; and • Litter should be placed in bins labelled type of litter in them
	Land capability	• Construction workers should not be allowed to litter; and • Litter should be placed in bins labelled type of litter in them.
	Surface water	• Spillages should be cleaned up immediately. • Surface water quality must be regularly monitored
	Groundwater	• Spillages should be cleaned up immediately • Groundwater quality must be regularly monitored.
	Natural vegetation	• Spillages should be cleaned up immediately.
	Animal life	• Spillages should be cleaned up immediately.
Access Road	Soil	Ensure surface levelling after use to prevent soil erosion.

	Land capability	• Vehicles should be restricted to roads; and • Minimal vegetation should be removed when clearing for access roads.
	Surface water	Water bodies should be avoided when upgrading access roads.
	Air quality	Dust suppression on roads with the use of water- roads should be sprayed with water.
	Natural vegetation	Route should be selected that a minimum number of bushes or trees are felled for roads.
	Animal life	It is a preference that existing roads should be used, by upgrading or maintaining the roads, however if access roads need to be constructed, the sites should be assessed to identify any habitats or breeding grounds of animals and birds.

	Archaeology/Cultural Heritage	Heritage sites within 25 m from any prospecting area should be clearly marked to prevent any accidental damages.
	Noise	Usage of roads by trucks should be restricted to between sunrise and sunset.

3.1 Assessment of the significance of the potential impacts

The table below indicates the ratings of significance of potential impacts.

Activity	Description	Affected Environment	Potential Impact	Mitigation measures	Nature of Impact (Positive/Negative)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)
CONSTRUCTION AND OPERATIONAL PHASE											
Upgrading of Access Roads	Access roads that already exist will be upgraded.	Soil	Increased erodibility of soils due to the removal of vegetation.	Ensure surface levelling after use to prevent soil erosion	N	2	2	2	6	4	24
		Natural Vegetation	Destruction and removal of natural vegetation during site clearance.	Route should be selected that a minimum number of bushes or trees are felled for roads.	N	2	2	3	7	4	28
		Surface Water	Potential siltation of surface run-off due to soil erosion.	Water bodies should be avoided when upgrading access roads. A buffer of	N	2	2	2	6	4	24

				100m should be left undisturbed.							
		Air Quality	Increased potential for dust emission due to wind erosion.	Dust suppression on roads with the use of water-roads should be sprayed with water.	N	2	2	2	6	4	24
Transportation of Equipment	The mining operation will involve transportation of equipment to the project area.	Soil	Soil compaction due to the repetitive movement on gravel roads.	Vehicles and machinery should be adequately maintained to prevent spillages resulting in soil contamination.	N	2	2	4	8	4	32
		Interested and Affected Parties	Potential damage to roads caused by movement of heavy vehicles and continual use of vehicles moving to and from the site.	Equipment's should be transported using main roads and during off peak traffic hours	N	3	3	3	9	4	36
		Air Quality	Increased dust emissions due to entrainment of dust particles by the movement and operation of construction equipment.	• Dust on roads should be suppressed with the use of water by a water cart truck.	N	3	3	3	9	4	36

Construction of surface infrastructure.	This will involve vegetation clearing and topsoil removal to construct offices, a change house, etc.	Soil	Permanent compaction of soil in areas of infrastructure construction	• Topsoil should be removed from all areas where physical disturbance of the surface will occur; • The topsoil removed for this activity should be stored within a bunded area on higher ground of the mining area, outside the 1:50 flood level, but within the boundaries of the project area; and • Oil spills should be cleaned up immediately	N	3	3	3	9	5	45
		Land Capability	Decreased land capability due to damage to the natural soil structure, soil loss through wind and water erosion and leaching of soil nutrients.	Topsoil should be removed from all areas where physical disturbance of the surface will occur	N	2	3	3	8	5	40

		Natural Vegetation	Disturbance of vegetation could result in soil erosion due to exposed soils.	Vegetation should be removed prior to topsoil soil removal in order to limit effects of site clearance	N	3	3	3	9	5	45
		Surface Water	Altered surface flow dynamics around surface infrastructure; Potential contamination of surface water due to spillage of fluids.	• Surface infrastructure such as offices and camps should not be located closer than 500 metres from any water courses. • No construction within the 1:50 year floodline	N	2	3	3	8	5	40
		Groundwater	Potential groundwater contamination due to infiltration of fluid contaminated water.	Spillages should be cleaned up immediately.	N	4	4	4	12	5	60
		Air Quality	Dust from construction vehicles on gravel and secondary roads.	On windy days, especially during spring between the months of September and October, wind can carry dust over a wider area, thus dust suppression by	N	3	3	4	10	5	50

				means of a water cart should be conducted on a daily basis to reduce dust emissions.							
Soil Removal and Stockpile	This will involve the removal of soil during site clearance.	Topography	Alteration of the local topography and disturbance of natural drainage lines.	Vegetation should be removed prior to topsoil removal in order to limit the effects of site clearance	N	2	5	3	10	4	40
		Visual	The creation of stockpiles alters the visual quality of the landscape.	Topsoil should be stockpiled in a designated area.	N	3	4	3	10	5	50
		Soil	Damage to the natural soil structure due to soil handling, removal and mixing of soil types and horizons; removal of vegetation causes a change in the water runoff characteristics of the site and	• Topsoil should be removed from all areas where physical disturbance of the surface area will occur; • The topsoil removed should be stored in a bund wall on high ground in the project area outside the 1:50 flood level and should be protected from	N	2	6	4	12	4	48

			increased probability of soil erosion. This leads to the loss of topsoil and an increase of siltation in the streams and rivers with the runoff carrying sediment; and Leaching of soil nutrients during long-term stockpiling.	being blown away or being eroded; • Topsoil should be kept separate from subsoil and should not be used for building or maintaining access roads; • Vegetate with diverse grass mix to control erosion; and • Topsoil fertility, biological quality should be monitored and a management plan should be implemented.							
		Land Capability	Decreased land capability due to damage to the natural soil structure, soil loss through wind and water erosion and leaching of soil	• The topsoil removed should be stored in a bund wall on high ground in the project area outside the 1:50 flood level and should be protected from being blown away or being	N	2	6	4	12	4	48

			nutrients.	eroded for use for rehabilitation of site; • Topsoil should be removed separately from sub- soils and should be stockpiled separately; and • The stockpile should be grassed to protect the topsoil from wind and rain.							
		Natural Vegetation	Damage to natural vegetation due to deposition of dust emitted during the tipping and stockpiling, restricting photosynthesis.	Vegetation should be removed prior to topsoil removal in order to limit the effects of site clearance on surface water flow dynamics.	N	2	6	4	12	3	36
		Animal Life	Potential direct impacts on threatened fauna species; Habitat disturbance and destruction; Potential	• Identification of sensitive species and habitats which need to be avoided should be conducted prior to topsoil removal.	N	2	3	3	8	4	32

			disruption on birds nesting, foraging or roosting in project area.								
		Air Quality	Increased potential for dust emissions due to wind erosion during the tipping of soil into trucks and onto stockpiles, as well as exposure of stockpiles to wind erosion; and Potential increase of dust generation.	Topsoil stockpiles will be allowed to naturally vegetate in order to stabilise particles and reduce the risk of wind erosion.	N	2	3	4	9	5	45
		Noise	Potential increase of noise of hauling trucks to topsoil stockpile site.	Tipping of topsoil into stockpiles should occur between sunrises to sunset.	N	3	2	3	8	6	48
Placement of a fence	A fence will be constructed around the mining site which will be limited to the	Animal life	Potential limitation of movement for domestic animals to grazing areas.	No mitigation is required. This is seen as a positive.	N	2	3	3	8	4	32

	demarcated area to protect the workings and prevent people and domestic animals from harm		This is a positive impact as it will prevent movement of domestic animals into demarcated areas, thus preventing injury.								
		Interested and Affected Parties	The fence could prevent access to communal agricultural fields and livelihood. Also, the fence will provide a safety factor, preventing access to areas where safety risks may occur.	No mitigation is possible.	N	3	4	3	10	5	50
		Groundwater	Potential groundwater contamination due to the infiltration of surface water contaminated with spilled	No mitigation is possible.	N	3	3	4	10	5	50

			hydrocarbons, chemicals.								
Use of Hydrocarbons, Chemicals	The use of hydrocarbons, chemicals will take place and these will be stored on site in designated storage areas.	Soil	Potential soil contamination.	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons used; and • Storage of used oil/ grease should be done in a designated bunded site until removal.	N	2	6	4	12	4	48
		Land Capability	Potential decreased land capability due to contaminated soil.	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; and • Storage of used oil/ grease should be done in a designated bunded site until removal.	N	2	6	4	12	4	48
		Natural Vegetation	Potential damage due natural vegetation and loss due to spillages of	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons;	N	2	6	4	12	4	48

			hydrocarbons, chemicals.	and • Storage of used oil/ grease should be done in a designated bunded site until removal.							
		Animal Life	Potential injury or loss of animals due to spillages of hydrocarbons, chemicals.	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; and • Storage of used oil/ grease should be done in a designated bunded site until removal; and • The storage area should be securely fenced.	N	2	4	6	12	3	36
		Surface Water	Potential contamination of surface water due to the spillage of hydrocarbons, chemicals or contaminated run-off sourced from	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; and • Storage of used oil/ grease should be done in a designated	N	4	4	4	12	4	48

			contaminated soil.	bunded site until removal.							
		Groundwater	Potential groundwater contamination due to the infiltration of surface water contaminated with spilled hydrocarbons, chemicals.	• Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; and • Storage of used oil/ grease should be done in a designated bunded site until removal.	N	4	5	5	14	4	56
Access Roads	Existing Access Roads will be used to access the site and to transport equipment onto and off the site. If need be, they will be upgraded	Soil	Upgrading of existing roads to will cause a potential to result in soil erosion, soil loss.	Ensure surface levelling after use to prevent soil erosion.	N	2	2	2	6	4	24
		Land Capability	Decreased agricultural and grazing potential of surrounding land due to deposition of dust	• Vehicles should be restricted to roads; and • Minimal vegetation should be removed when clearing for	N	3	3	3	9	4	36

			emitted by vehicle entrainment on haul roads.	access roads.							
		Natural Vegetation	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads; Site clearing and removal of topsoil could lead to soil erosion and soil loss.	Route should be selected that a minimum number of bushes or trees are felled for roads.	N	3	3	3	9	4	36
		Surface Water	Altered surface flow dynamics due to removal of topsoil and topographical alterations and increased surface runoff from cleared areas;	Water bodies should be avoided when upgrading access roads. A buffer of 100m should be left undisturbed.	N	2	3	4	9	5	45

			Potential surface water runoff over haul roads will result in erosion and consequent siltation of surface water resources; Potential contamination of surface water runoff from hauls roads due to the spillage of hydrocarbons from vehicles travelling on haul roads.								
		Air Quality	Potential dust pollution caused by construction vehicles	Dust suppression on roads with the use of water- roads should be sprayed with water.	N	3	3	4	10	4	40
		Noise	Potential elevated noise levels due to continuous vehicular movement on haul	Usage of roads by trucks should be restricted to between sunrise and sunset.	N	3	3	3	9	5	45

			roads.								
		Interested and Affected Parties	Potential damage to roads could impact safety of people and animals.	Trucks should be restricted to between sunrise and sunset.	N	2	3	3	8	5	40
Drilling, pitting and Trenching	The use of machinery to dig up soil (either soft or hard) to extract materials/minerals	soil	Removal of topsoil could damage the natural soil structure due to soil handling, removal and mixing of soil types and horizons resulting in increased erodibility of soils due to damage to the natural soil structure; potential soil contamination sourced from hydrocarbons	•The topsoil removed should be stored within a an area on higher ground of the mining area, outside the 1:50 flood level, but within the boundaries of the project area; •Drip trays and designated bunded sites should be used to protect soils from hydrocarbons; •Storage of used oil/ grease should be done in a designated bunded area until removal; •During rehabilitation, soil should be replaced in a manner that will promote the natural	N	2	6	4	12	5	60

				growth of vegetation.							
		Land capability	Decreased land capability due to damage to natural soil structure and soil loss through wind and water erosion	Soil should be replaced in a manner that will promote natural growth of vegetation;	N	2	6	4	12	5	60
		Surface water	Potential contamination of surface water due to spillage of fluids.	Water courses should be avoided. Mining should not take place within 100m from a water source	N	4	5	5	14	4	56
		Air quality	Potential pollutants of air from machinery and vehicular emissions.	Dust emissions from trucks and bakkies on dusty roads will be suppressed by water spraying.	N	4	5	5	14	4	56
		Natural vegetation	Disturbance of vegetation could result in soil erosion due to exposed soils.	No unnecessary disturbance of vegetation during mining activities, thus, the removal of vegetation should be limited; Rehabilitation should be done to promote natural	N	2	5	4	11	5	55

				vegetation establishment							
		Animal life	Disruption of animal habitats such as nests and breeding grounds (potential modification, fragmentation, and reduction of habitat).	Identification of sensitive species and habitats which need to be avoided; and there should be no unnecessary disturbance on animal habitats such as nests and breeding grounds.	N	2	4	6	12	4	48
DECOMMISSIONING AND CLOSURE											
Rehabilitation	All areas disturbed will be rehabilitated to its original state with the waste rock and topsoil stockpiles. Roads should be ripped Or ploughed and fertilised if necessary to promote re-growth of vegetation.	Soil and Vegetation	Positive impact as topsoil will be replaced to enhance vegetation growth.	Soils have to be levelled and indigenous plants should be planted to cover the bare soil	N	2	3	3	8	4	32
		Animal Life	Positive impact as vegetation will re-establish itself and the natural Fauna will gradually return to the rehabilitated sites.	No animal life should be tempered with and area to be rehabilitated in a manner that supports animal habitat within it.	N	2	2	2	6	4	24

3.1.1 Criteria of assigning significance to potential impacts

This section provides a description of the methodology that was applied to assess the significance of environmental and heritage impacts. The significance rating process follows the established impact/risk assessment formula:

Significance= Consequence x Probability

WHERE

Consequence= Severity + Spatial Scale +Duration

AND

Probability = Likelihood of an impact occurring

The matrix first calculates the rating out of 75 and then converts this into a percentage out of 100. The percentage is the figure quoted in the matrix. The weight assigned to the various parameters for positive and negative impacts in the formula is presented in the Table below.

Rating	Severity		Spatial Scale	Duration	Probability
	Environmental	**Social/Cultural Heritage**			
7	Very significant impact on the environment. Irreparable damage to highly valued species, habitat or ecosystem. Persistent severe damage.	Irreparable damage to highly valued items of great cultural significance or complete breakdown of social order.	International	Permanent to mitigation	Certain/ Definite
6	Significant impact on highly valued species, habitat or ecosystem.	Irreparable damage to highly valued items of cultural significance or breakdown of social order.	National	Permanent mitigated	Almost certain/ High probability
5	Very serious, long- term environmental impairment of ecosystem function that may take several years to rehabilitate.	Very serious widespread social impacts. Irreparable damage to highly valued items.	Province/Region	Project life (The impact will cease after the operational life span of the project)	Likely

4	Serious medium term environmental effects. Environmental damage can be reversed in less than a year.	On-going serious social issues. Significant damage to structures / items of cultural significance	Municipal Area	Long term (6-15 years)	Probable
3	Moderate, short- term effects but not affecting ecosystem function. Rehabilitation requires intervention of external specialists and can be done in less than a month.	On-going social issues. Damage to items of cultural significance.	Local	Medium term (1-5 years)	Unlikely/ Low probability
2	Minor effects on biological or physical environment. Environmental damage can be rehabilitated internally with/ without help of external	Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and	Limited	Short term (Less than 1 year)	Rare/ improbable

	consultants.	processes not affected.			
1	Limited damage to minimal area of low significance, (e.g. ad hoc spills within plant area). Will have no impact on the environment	Low-level repairable damage to commonplace structures	Very Limited	Immediate (Less than 1 month)	Highly Unlikely/ None

Significance

Probability/Likelihood	Consequence (severity+scale+duration)								
	1	3	5	7	9	11	15	18	21
1	1	3	5	7	9	11	15	18	21
2	2	6	10	14	18	22	30	36	42
3	3	9	15	21	27	33	45	54	63
4	4	12	20	28	36	44	60	72	84
5	5	15	25	35	45	55	75	90	105
6	6	18	30	42	54	66	90	108	126
7	7	21	35	49	63	77	105	126	147

Significance		
High	108-147	
Medium-High	73-107	
Medium-Low	36-72	
Low	0-35	

3.1.2 Potential impacts of each main activity in each phase, and corresponding significance assessment.

Activity 1: Transport of equipment

Impacted environment: Soil, land capability, surface water, groundwater, air quality, natural vegetation, animal life, archaeology/ cultural heritage and noise.

Description: The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent with noise potentially occurring over a local extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment.

Clarification of Abbreviations C, O, D

- C- Construction
- O- Operational
- D- Decommission

Phase Impact Occurs (C,O,D)	Affected Environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	significance Rating (Pre-Mitigation)
C,O,D	Soil	N	2	6	4	12	4	48	Medium-Low
C,O,D	Land Capability	N	2	6	4	12	4	48	Medium-Low
C,O,D	Surface Water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Ground Water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Air Quality	N	2	3	4	9	4	36	Medium-Low
C,O,D	Natural Vegetation	N	2	6	4	12	4	48	Medium-Low
C,O,D	Animal Life	N	2	4	6	12	4	48	Medium-Low
C,O,D	Cultural Heritage/Archaeology	N	4	5	5	14	5	70	Medium-Low
C,O,D	Noise	N	3	2	3	8	5	40	Medium-Low

Activity 2: *Establishment of surface infrastructure*

Impacted environment: Soil, land capability, surface water, groundwater, air quality, natural vegetation, animal life and noise.

Description: This activity will cause surface disturbance. Specific to soil, surface water and groundwater pollution, hydrocarbon spillages can occur as a result of on- site vehicle maintenance or accidental oil spills. The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent with noise potentially occurring on a local special extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment.

Phase Impact Occurs (C,O,D)	Affected Environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	significance Rating (Pre-Mitigation)
C,O,D	Soil	N	2	6	4	12	4	48	Medium-Low
C,O,D	Land Capability	N	2	6	4	12	4	48	Medium-Low
C,O,D	Surface Water	N	4	5	5	14	3	42	Medium-Low
C,O,D	Ground Water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Air Quality	N	2	3	4	9	4	36	Medium-Low
C,O,D	Natural Vegetation	N	2	6	4	12	5	60	Medium-Low
C,O,D	Animal Life	N	2	4	6	12	4	48	Medium-Low
C,O,D	Noise	N	3	2	3	8	4	32	Medium-Low

Activity 3: **Waste generation and disposal**

Impacted environment: Soil, land capability, surface water and groundwater.

Description: The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent with surface and groundwater occurring over a limited extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment

Phase Impact Occurs (C,O,D)	Affected Environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	significance Rating (Pre-Mitigation)
C,O,D	Soil	N	2	6	4	12	4	48	Medium-Low
C,O,D	Land Capability	N	2	6	4	12	4	48	Medium-Low
C,O,D	Surface Water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Ground Water	N	4	5	5	14	4	56	Medium-Low

Activity 4: Use of hydrocarbons and chemicals

Impacted environment: Soil, land capability, surface water, groundwater, natural vegetation

Description: This activity involves the use of hydrocarbons and chemicals in the project area. There is potential for spillages. The significance of the impacts of the activity on the affected environment are potentially medium-low, with high probability of occurrence. Most of the environment will be potentially impacted over a limited spatial extent with surface and groundwater occurring over a limited extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment

Phase Impact Occurs (C,O,D)	Affected Environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	significance Rating (Pre-Mitigation)
C,O,D	Soil	N	2	6	4	12	5	60	Medium-Low
C,O,D	Land Capability	N	2	6	4	12	5	60	Medium-Low
C,O,D	Surface Water	N	4	5	4	14	4	56	Medium-Low
C,O,D	Ground Water	N	4	5	5	14	4	56	Medium-low
C,O,D	Natural Vegetation	N	2	6	4	12	5	60	Medium low
C,O,D	Animal Life	N	2	4	6	12	4	48	Medium-Low

Activity 5: Domestic waste

Impacted environment: Soil, Visual, land capability, surface water, groundwater, natural vegetation and animal life.

Description: The significance of the impacts of the activity on the affected environment are potentially medium-low, with high probability of occurrence. Most of the environment will be potentially impacted over a limited spatial extent, except for surface and groundwater which is most likely to occur on a limited spatial extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment

Phase Impact Occurs (C,O,D)	Affected Environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	significance Rating (Pre-Mitigation)
C,O,D	Soil	N	2	6	4	12	5	60	Medium-Low
C,O,D	Land Capability	N	2	6	4	12	5	60	Medium-Low
C,O,D	Surface Water	N	4	5	4	13	4	52	Medium-Low
C,O,D	Ground Water	N	4	5	4	13	4	52	Medium-Low

3.1.3 Assessment of potential cumulative impacts.

Geology

Prospecting activity within the region will permanently alter the geology of the region as more resources are being mined and there could be potential for the resources to the mined further. As the project will be in its mining phase thus, the impact on the geology is of medium-low significance.

Soils, land capability and land use

Mining activities involve the mining of materials/minerals and this will increase the potential for soil erosion as soil erosion within the project area but it will be minimal. Soil pollution from domestic waste and use of hydrocarbons spillages

may occur. Thus, the activities will result in a potential increase in soil contamination. The cumulative impact on regional land capability and land use is low due to the land use being predominately for agriculture which is dominated by grazing and used for housing. Thus, the activities will result in a low significance cumulative impact only being limited to the site and its immediate surroundings.

Groundwater

Possible contribution of groundwater contamination includes spillages hydrocarbons sourced from trucks and machinery, ablutions and domestic waste. The total cumulative impacts are low as this will be limited to the site.

Air quality

In future, increased mining activities in the region will contribute to impacts on the ambient air quality levels. Vehicle movement could cause an increase in dust levels thus, will increase the existing dust levels in the area. The cumulative impact of agricultural activities on regional air quality is not considered as significant, since these impacts occur only at specific times of the year and during the day. Increasing mining activities in the region will be of medium-high significance. Thus, the total cumulative impacts are expected to be medium- low.

Noise

Cumulative impacts are expected to be significant due to mining plant activities. The surrounding farmers will also contribute to noise levels in the area with regards to agricultural activities. Trucks and constructing machinery could also contribute to the noise levels. Thus, the total cumulative impacts are expected to be significant.

Visual aspects

The mining activities are expected to have a slight impact on the visual aspects. There are however, extensive existing impacts on the visual aspects of the area due to the presence of, roads, and other human infrastructure related to human activities.

The cumulative impacts can be summarised in the table below:

Impacted Environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)
Geology	N	1	3	1	5	2	10
Soils,Land capability and land use	N	3	4	3	10	5	50
Surface water	N	3	3	2	8	4	32
Groundwater	N	3	3	2	8	4	32
Air quality	N	2	3	2	7	4	28
Noise	N	2	2	2	6	4	24
Flora	N	1	3	2	6	4	24
Fauna	N	1	3	2	6	4	24
Site of Archaeological and Cultural Interest	N	2	3	2	7	4	28
Visual Impacts	N	1	3	2	6	4	24

3.2 Proposed mitigation measures to minimise adverse impacts.

CUMULATIVE IMPACT	MITIGATORY MEASURES
Impact on Geology	Prospecting activities should only take place on demarcated and marked areas. It should not be allowed to take place beyond the boundary of the proposed farms.
Impact on Soils, land capability and land use	Top soil removed on site should be stockpiled separately from sub soil. The topsoil should be used to rehabilitate the area and natural vegetation should be restored to its original state. Only indigenous vegetation should be used for rehabilitation.
Impact on Surface water	No mining activities should take place within 100 metres of any open water source. Drip trays should be used on oil leaking vehicles.
Impact on	Mining activities should only take place on demarcated

Groundwater	areas. Contamination of groundwater by oil leaks should be avoided using drip trays on all leaking vehicles and equipment.
Air Quality	Speed limits of 10km/h should be maintained to avoid dust generation. There is also need to avoid unnecessary clearing of the land.
Noise	Movement of vehicles should only be restricted to working hours, that is between 07h00 to 17h00, and speed limits of 10km/h should be maintained
Flora	Vegetation should not be allowed to be harvested for firewood and no fires will be allowed on the proposed areas. Re-vegetating disturbed areas should only be done using natural indigenous plants
Fauna	No wild animals should be hunted on the farms, and no dogs or any form of pets will be allowed on site.
Visual Aspects	Rehabilitation should be done ensure that the visual aspect of the area is restored to its original state.

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

All activities require mitigation, namely:

- Storage of hydrocarbons, chemicals
- Placing of fence;
- Storage of topsoil (Topsoil stockpile);
- Transport of equipment;
- Construction of surface infrastructure and pitting;
- Waste generation, disposal and sewage handling;
- Domestic waste; and
- Access roads
- Drilling

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)

Soil monitoring:

Topsoil stockpiles should be re-vegetated and the performance of the vegetation should be assessed by a specialist once a year. Topsoil will be removed separately from the sub-soils and will be stockpiled separately. These stockpiles will be sloped to approximately 18-25 degrees and grassed to protect it from the elements such as rain and wind. Topsoil will be used to backfill the portal area and when mining discontinues. Sub-soils will mainly be utilised for backfilling with topsoil to be spread evenly over the area to be rehabilitated. Topsoil will be replaced in a minimum layer of 300 mm over the backfilled area. A suitable seed mix will be spread over the backfilled area to promote the establishment of vegetation.

Surface water:

No mining activities are to take place within the 1:100 year floodline of any water courses. Monthly monitoring of all surface water resources is to take place. No mining activities will take place within 100m from any open water source

Groundwater:

A monitoring procedure should be compiled that covers the location. Monitoring results will be captured in an electronic database as soon as results become available allowing:

- Data presentation in tabular format;
- Time-series graphs with comparison abilities;
- Statistical analysis (minimum, maximum, average) in tabular format;
- Graphical presentation of statistics;
- Linear trend determination;
- Performance analysis in tabular format;

- Presentation of data, statistics and performance on diagrams and maps; and
- Comparison and compliance to legal or best practice water quality standards

Air quality:

Air quality monitoring should be conducted and points should be located to assess impacts on the nearest sensitive receptors, taking prevalent wind direction into account. Blasting will be limited to as far as possible and take place under controlled conditions. There are no settlements of communities within the 500 m dust fallout zone. Dust suppression by means of a water cart or any other method should be done at least once a day.

Noise Monitoring

Monitoring of noise levels on-site as well as at the potential noise and vibration impact at the site during mining will be conducted by an appointed specialist in this regard. Noise should not exceed 100dB and 80dB at a distance of 500 meters from the mining operation and mining equipment respectively. Records of all the results of the monitoring programme will be kept at the mine offices.

3.2.3 Review the significance of the identified impacts

(After bringing the proposed mitigation measures into consideration).

Activity	Phase Impact Occurs (C,O,D)	Affected Environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)
	C,O,D	Soil	N	1	2	3	6	3	18
	C,O,D	Land Capability	N	1	2	3	6	3	18
	C,O,D	Surface Water	N	3	3	1	7	3	21
	C,O,D	Ground Water	N	3	3	1	7	3	21
Construction of infrastructure and pitting	C,O,D	Natural Vegetation	N	1	2	4	7	3	21
	C,O,D	Animal Life	N	1	3	6	10	3	30
	O,D	Topography	N	2	5	3	10	6	60
	O,D	Visual	N	2	4	2	8	4	32
	C,O,D	Archaeology/Cultural Heritage	N	1	3	1	5	2	10
	C,O,D	Noise	N	2	2	2	6	3	18
	C,O,D	Air Quality	N	1	2	2	5	3	15
	C,O,D	Soil	N	1	2	3	6	3	18
	C,O,D	Land Capability	N	1	2	3	6	3	18
	C,O,D	Surface Water	N	3	3	1	7	3	21
Storage of hydrocarbons, chemicals	C,O,D	Ground Water	N	3	3	1	7	3	21
	C,O,D	Natural Vegetation	N	1	2	3	6	3	18
	C,O,D	Animal Life	N	2	3	2	7	3	21

Fence	C,D	Visual	N	2	4	2	8	4	32
	C,D	Animal Life	P	2	3	3	8	4	32
Storage of topsoil	C,D	Soil	N	1	2	3	6	3	18
	C,O,D	Land Capability	N	1	2	3	6	3	18
	C,D	Visual	N	2	4	2	8	4	32
	C,O,D	Topography	N	2	5	3	10	6	60
	C,O,D	Surface Water	N	3	3	1	7	3	21
	C,O,D	Air Quality	N	1	2	2	5	3	15
	C,O,D	Natural Vegetation	N	1	2	3	6	3	18
	C,O,D	Animal Life	N	1	3	2	6	3	18
	C,O,D	Noise	N	2	2	2	6	3	18
Transportation of Equipment	C,O,D	Soil	N	1	2	3	6	3	18
	C,O,D	Land Capability	N	1	2	3	6	3	18
	C,O,D	Surface Water	N	3	3	1	7	3	21
	C,O,D	Ground Water	N	3	3	1	7	3	21
	C,O,D	Air Quality	N	1	2	2	5	3	15
	C,O,D	Natural Vegetation	N	1	2	3	6	3	18
	C,O,D	Animal Life	N	1	2	2	5	3	15
	C,O,D	Cultural Heritage/Archaeology	N	1	3	1	5	2	10
	C,O,D	Noise	N	2	2	2	6	3	18
Construction of Surface Infrastructure	C,O,D	Soil	N	1	2	3	6	3	18
	C,O,D	Land Capability	N	1	2	3	6	3	18
	C,O,D	Surface Water	N	3	3	1	7	3	21
	C,O,D	Ground Water	N	3	3	1	7	3	21
	C,O,D	Air Quality	N	1	2	2	5	3	15

	C,O,D	Natural Vegetation	N	1	2	3	6	3	18
	C,O,D	Animal Life	N	1	3	2	6	3	18
	C,O,D	Noise	N	2	2	2	6	3	18
Waste Generation, Disposal and Sewage Handling	C,O,D	Soil	N	1	2	3	6	3	18
	C,O,D	Land Capability	N	1	2	3	6	3	18
	C,O,D	Surface Water	N	3	3	1	7	3	21
	C,O,D	Ground Water	N	3	3	1	7	3	21
Domestic Waste	C,O,D	Soil	N	1	2	3	6	3	18
	C,O,D	Visual	N	1	2	3	6	3	18
	C,O,D	Land Capability	N	1	2	1	4	3	12
	C,O,D	Surface Water	N	3	3	1	7	3	21
	C,O,D	Groundwater	N	3	3	1	7	3	21
	C,O,D	Natural Vegetation	N	1	2	3	6	3	18
	C,O,D	Animal Life	N	1	3	2	6	3	18
Access Roads	C,O,D	Soil	N	1	2	3	6	3	18
	C,O,D	Land Capability	N	1	2	3	6	3	18
	C,O,D	Surface Water	N	1	3	1	5	3	15
	C,O,D	Ground Water	N	1	2	2	5	3	15
	C,O,D	Air Quality	N	1	2	3	6	3	18
	C,O,D	Natural Vegetation	N	1	3	2	6	3	18
	C,O,D	Animal Life	N	1	3	3	7	3	21
	C,O,D	Cultural Heritage/Archaeology	N	1	3	2	6	2	12
	C,O,D	Noise	N	2	2	2	6	3	18

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).

Type of mining activities planned	Dimensions
Access roads	Decision not yet made. Plan is to make use of existing access roads, however this is subject to approval by the landowner/s and other affected parties and if access roads have to be constructed they will be similar to existing roads in width (generally less than 4 m). Length will be determined by condition of existing access roads.
Ablution facilities	Chemical toilet facilities will be utilised if use of existing facilities is not possible (number of toilets will be controlled by the project phase and number of employees and contractors on-site).
Soil Stockpiling	Stockpiling will be monitored not to exceed 1.5m in height.

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 methods for infrastructure and rehabilitation and its associated costing was based on the Department of Mineral Resources (DMR) guidelines set

out by the DMR in the "Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine" (2005). This has been described below:

General rehabilitation

General surface rehabilitation must involve the shaping of the surface topography to match the surrounding landscape and 300mm of topsoil, where available, need to be added to the site. During the process of shaping the landscape proper drainage lines must be properly reinstated into the topography. Any heaps of excess material also need to be removed, this all so that effective re-vegetation can take place.

Maintenance and Aftercare

Maintenance and aftercare must be planned for 1 year after mining has ceased. Maintenance will specifically focus on vegetation, on rehabilitated areas, as well as any alien vegetation that needs to be controlled.

The closure objectives include the following:

- To comply with local regulatory requirements and international best practice;
- To address all relevant stakeholder issues and concerns;
- To identify all knowledge gaps that require further investigation;
- Form active partnerships with local communities where possible;
- To implement progressive rehabilitation measures, leaving a safe and stable environment for communities and animals;
- To ensure that the rehabilitation efforts do not impact adversely on public and employee health, safety and welfare;
- To prevent or mitigate adverse environmental effects;
- To maintain and monitor all rehabilitated areas and to ensure closure objectives are met;
- To enhance positive socio-economic impacts in the area in which the operation is located following decommissioning and subsequent rehabilitation and closure by achieving sustainable land-use conditions similar to that which

existing prior to the prospecting, or alternatively as agreed with the applicable government regulator and affected communities; and

- To avoid or minimise costs and long-term liabilities to the company and to the government and public.

4.3 Quantum calculation

(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).

The quantum calculations for the mining activities have been calculated based on using the Department of Mineral Resources (DMR), formerly the DMR Guideline Document format of 2005. The Guideline makes use of a set template for which defined rates and multiplication factors are used. The multiplication and weighting factors which ultimately define the rate to be used are determined by amongst others the topography, the classification of the site, the mineral to be extracted, the risk class of the site and its proximity to built-up or urban areas. As per the DMR's "Guideline Document for the Evaluation of the Quantum of Closure related Financial Provision Provided by a Mine", the Master Rates for the DMR spread sheet have been updated based on recent rates by the DMR in 2012.

CALCULATION OF THE QUANTUM

Applicant: **RANDQUIP PTY LTD** **Ref No.** **GP 30/5/1/1/2/ (10316) PR**
Evaluator **KIMOPAX PTY LTD** **Date:** **Jan-15**

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	6.82	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	95	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	140	1	1	0
3	**Rehabilitation of access roads**	**m2**	**230**	**17**	**1**	**1**	**3910**
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	165	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	90	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	190	1	1	0
6	**Opencast rehabilitation including final voids and ramps**	**ha**	**0**	**96700**	**0.52**	**1**	**0**
7	Sealing of shafts adits and inclines	m3	0	51	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0.1	64400	1	1	6440
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	82700	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	240200	1	1	0
9	Rehabilitation of subsided areas	ha	0.05	55600	1	1	2780
10	**General surface rehabilitation**	**ha**	**0.1**	**52600**	**1**	**1**	**5260**
11	River diversions	ha	0	52600	1	1	0
12	Fencing	m	20	60	1	1	1200
13	Water management	ha	0.2	20000	1	1	4000
14	2 to 3 years of maintenance and aftercare	ha	0.3	7000	1	1	2100
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum	0			1	0
					Sub Total 1		25690

1	Preliminary and General	3082.8	**weighting factor 2** 1	3082.8
2	Contingencies		2569	2569
			Subtotal 2	31341.80
			VAT (14%)	4387.85
			Grand Total	**35730**

4.4 Undertaking to provide financial provision

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

It is hereby undertaken that the financial provision for rehabilitation purposes as required in terms of section 41 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 202) as read with regulations 53 and 54 of the Regulations to the said Act will be submitted to the Department of Mineral Resources; North West Regional Office once a prospecting right has been granted by the minister or the delegates of the minister. Randquip (Pty) Ltd is committed to have set aside an amount of **R35 730** for rehabilitation of the proposed prospecting activities.

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

5.1 List of identified impacts requiring monitoring programmes.

Phase	Affected Environment	Potential Impact	Monitoring Required
Drilling	Soil	Removal of topsoil could damage the natural soil structure due to soil handling, removal and mixing of soil types and horizons resulting in increased erodibility of soils due to damage to the natural soil structure.	Yes
	Surface water	Potential contamination of surface water due to spillage of drill fluids.	Yes
	Groundwater	Potential groundwater contamination due to infiltration of drill fluid contaminated water.	Yes
	Air quality	Dust and emissions from vehicles and drilling in project area.	Yes
	Natural vegetation	Disturbance of vegetation could result in soil erosion due to exposed soils.	Yes

	Archaeology/Cultural Heritage	Potential damage to graves and artefacts which could lead to the loss of cultural heritage.	Yes
	Noise	Potential elevated noise levels in the surrounding environment.	Yes
Construction of mining structures	Soil	Removal of topsoil during the construction of structures could cause damage to the natural soil structure due to soil handling, removal and mixing of soil types and horizons resulting in increased erodibility of soils due to damage to the natural soil structure.	Yes
	Air quality	Increased dust emissions.	Yes
	Natural vegetation	Site clearing and removal of topsoil could lead to soil erosion and soil loss.	Yes
	Noise	Increased noise levels and vibrations during blasting.	Yes
Storage of hydrocarbons and chemicals	Soil	Potential soil contamination	Yes
	Surface water	Potential contamination of surface water due to the spillage of hydrocarbons, chemicals and explosives or contaminated run- off sourced from contaminated soil.	Yes
	Groundwater	Potential groundwater contamination due to the infiltration of surface water contaminated with spilled	Yes

		hydrocarbons, chemicals or explosives.	
Temporary Fence	Social	Access will be prohibited to owners of agricultural fields	Yes
Removal and storage of topsoil (Topsoil stockpile	Soil	Damage to the natural soil structure due to soil handling, removal and mixing of soil types and horizons; removal of vegetation causes a change in the water runoff characteristics of the site and increased probability of soil erosion. This leads to the loss of topsoil and an increase of siltation in the streams and rivers with the runoff carrying sediment; and Leaching of soil nutrients during long-term stockpiling	Yes
	Surface water	Altered surface flow dynamics due to alterations in the on-site topography; and increase of siltation in the streams and rivers with the runoff carrying sediment	Yes
	Air quality	Increased potential for dust emissions due to wind erosion as a result of loose soil particles on stockpiles, as well as exposure of stockpiles to wind erosion;	Yes
	Natural vegetation	Damage to natural vegetation due to deposition of dust emitted during the tipping and stockpiling, restricting photosynthesis.	Yes

	Noise	Potential increase of noise of hauling trucks to topsoil stockpile site	Yes
Transport of equipment	Soil	Potential spillage of hydrocarbons could result in soil contamination	Yes
	Air quality	Potential increase of dust pollution due to transportation	Yes
	Natural vegetation	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads.	Yes
	Archaeology/Cultural Heritage	Potential damage to graves and artefacts which could lead to the loss of cultural heritage due to construction of access roads.	Yes
Construction of surface infrastructure	Soil	Removal of topsoil could damage the natural soil structure due to soil handling, removal and mixing of soil types and horizons resulting in increased erodibility of soils due to damage to the natural soil structure; and potential soil contamination due to hydrocarbon leakages of construction machinery	Yes
	Surface water	Altered surface flow dynamics due to removal of topsoil and topographical alterations and increased surface	Yes

		runoff from cleared areas; Potential siltation of surface runoff due to soil erosion; and Potential surface water contamination due to hydrocarbon leakages from construction machinery	
	Groundwater	Reduced infiltration of surface water into groundwater zone due to removal of vegetation; Potential ground water contamination due to hydrocarbon leakages from construction machinery.	Yes
	Air quality	Potential emissions generated from vehicle emissions, diesel emissions and speeding construction vehicles.	Yes
	Natural vegetation	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads; Site clearing and removal of topsoil could lead to soil erosion and soil loss	Yes
	Noise	Potential elevated noise levels resulting from construction equipment such as chainsaws, bulldozers, drill machines etc.; Potential elevated noise levels resulting from construction camps	Yes
Waste generation, disposal	Soil	Potential contamination of soil due to incorrect handling,	Yes

and sewage handling		storage and disposal of waste, or spillage of sewage.	
	Surface water	Potential contamination of surface water due to incorrect handling, storage and disposal of waste, or spillage of sewage.	Yes
	Groundwater	Potential infiltration of surface water contaminated by the incorrect handling, storage and disposal of waste, or spillage of sewage.	Yes
	Surface water	Potential contamination due to inadequate sanitation for construction workers; and potential accidental leakages of sanitary facilities into streams and wetlands.	Yes
	Groundwater	Potential contamination due to inadequate sanitation for construction workers.	Yes
Domestic waste	Soil	Potential of domestic waste, effluents and household chemicals contaminating soil; Potential contamination of soil due to improper waste separation, which leaves metals and other contaminants in the waste stream.	Yes
	Surface water	Potential of domestic waste, effluents and household chemicals contaminating in local streams; Potential leachate from waste stored for recycling resulting in	Yes

		surface water contamination from a rain.	
	Groundwater	Potential of domestic waste/effluents and household chemical compounds contaminating groundwater; Potential leachate from waste stored for recycling resulting in groundwater contamination from a rain.	Yes
Access Road	Soil	Site clearing to construct road will cause a potential to result in soil erosion, soil loss.	Yes
	Surface water	Altered surface flow dynamics due to removal of topsoil and topographical alterations and increased surface runoff from cleared areas; Potential surface water runoff over haul roads will result in erosion and consequent siltation of surface water resources; Potential contamination of surface water runoff from hauls roads due to the spillage of hydrocarbons from vehicles travelling on haul roads.	Yes
	Air quality	Potential dust pollution caused by construction vehicles	Yes
	Natural vegetation	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads; Site clearing and	Yes

		removal of topsoil could lead to soil erosion and soil loss	
	Archaeological/ Cultural Heritage	Potential damage to graves and artefacts which could lead to the loss of cultural heritage due to construction of access roads.	Yes
	Noise	Potential elevated noise levels due to continuous vehicular movement on haul roads.	Yes

5.2 Functional requirements for monitoring programmes.

Soil monitoring:

Soil stockpiles should be re-vegetated and the performance of the vegetation should be assessed by a specialist once a year.

Groundwater

A monitoring procedure should be compiled that covers the location. Monitoring results will be captured in an electronic database as soon as results become available allowing:

- Data presentation in tabular format;
- Time-series graphs with comparison abilities;
- Statistical analysis (minimum, maximum, average) in tabular format;
- Graphical presentation of statistics;
- Linear trend determination;
- Performance analysis in tabular format;
- Presentation of data, statistics and performance on diagrams and maps; and
- Comparison and compliance to legal or best practice water quality standards

Air quality

Air quality monitoring should be conducted and points should be located to assess impacts on the nearest sensitive receptors, taking prevalent wind direction into account.

Noise

Noise from the mining activities has the potential to impact on the local community in close proximity to the project area. Thus, noise monitoring should be conducted to determine whether the operations noise levels impact on the community.

Flora

When removing alien invasive species and weeds, care must be taken to eradicate the plants fully. According to the Conservation of Agricultural Resources Act (Act 43 of 1983) eradicate means to treat plants by any suitable method in order to prevent such plants from growing, multiplying and propagating. Therefore, when removing plants from the site it should be done at such a time when they are not producing seeds that could easily be spread by wind during cutting and transport. Plants that are known to grow back easily need to be uprooted in order to remove all possible avenues for re-growth and any juvenile plants spotted growing during the operation need to be removed before they become a problem.

Fauna

Should any animals be disturbed by the activities, the operators will be required to call in qualified people to handle and relocate the animals found. The same methodology must be applied to bird life when nests are found.

Archaeology

Sites should be monitored for potential archaeological and heritage findings (i.e. change find procedures must be implemented).

5.3 Roles and responsibilities for the execution of monitoring programmes.

The following people will be responsible for the execution of the monitoring programmes

- Environmental Co-ordinator
- Project Manager and
- Engineering Manager
- Randquip (Pty) Ltd

5.4 Committed time frames for monitoring and reporting.

Activity	Description	Affected Environment	Potential Impact	Monitoring Required	Monitoring and reporting Frequency
Upgrading of Access Roads	Access roads that already exist will be upgraded.	Soil	Increased erodibility of soils due to the removal of vegetation.	Yes	During Construction
		Natural Vegetation	Destruction and removal of natural vegetation during site clearance.	Yes	During Construction
		Surface Water	Potential siltation of surface run-off due to soil erosion.	Yes	During construction
		Air Quality	Increased potential for dust emission due to wind erosion.	Yes	During Construction
Transportation of Equipment	The mining operation will involve transportation of equipment to the	Soil	Soil compaction due to the repetitive movement on gravel roads.	Yes	Weekly
		Interested	Potential	Yes	Every months

	project area.	and Affected Parties	damage to roads caused by movement of heavy vehicles and continual use of vehicles moving to and from the site.		
		Air Quality	Increased dust emissions due to entrainment of dust particles by the movement and operation of construction equipment.	Yes	During Construction
Construction of surface infrastructure.	This will involve vegetation clearing and topsoil removal to construct offices, a change house, etc.	Soil	Permanent compaction of soil in areas of infrastructure construction	Yes	
		Land Capability	Decreased land capability due to damage to	Yes	weekly

			the natural soil structure, soil loss through wind and water erosion and leaching of soil nutrients.		
		Natural Vegetation	Disturbance of vegetation could result in soil erosion due to exposed soils.	Yes	Monthly
		Surface Water	Altered surface flow dynamics around surface infrastructure; Potential contaminatio n of surface water due to spillage of fluids.	Yes	Monthly
		Groundwat er	Potential groundwater contaminatio n due to infiltration of fluid	Yes	Every 3 Months

			contaminated water.		
		Air Quality	Dust from construction vehicles on gravel and secondary roads.	Yes	Monthly
Soil Removal and Stockpile	This will involve the removal of soil during site clearance.	Topography	Alteration of the local topography and disturbance of natural drainage lines.	Yes	Monthly
		Visual	The creation of stockpiles alters the visual quality of the landscape.	Yes	Every 3 months
		Soil	Damage to the natural soil structure due to soil handling, removal and mixing of soil types and horizons; removal of	Yes	Weekly

			vegetation causes a change in the water runoff characteristics of the site and increased probability of soil erosion. This leads to the loss of topsoil and an increase of siltation in the streams and rivers with the runoff carrying sediment; and Leaching of soil nutrients during long-term stockpiling.		
		Land Capability	Decreased land capability due to damage to the natural soil structure, soil loss	Yes	Monthly

			through wind and water erosion and leaching of soil nutrients.		
			Alteration of the local topography and disturbance of natural drainage lines.		
			Alteration of the local topography and disturbance of natural drainage lines.		
		Natural Vegetation	Damage to natural vegetation due to deposition of dust emitted during the tipping and stockpiling, restricting	Yes	Monthly

			photosynthesis.		
		Animal Life	Potential direct impacts on threatened fauna species; Habitat disturbance and destruction; Potential disruption on birds nesting, foraging or roosting in project area.	Yes	Monthly
		Air Quality	Increased potential for dust emissions due to wind erosion during the tipping of soil into trucks and onto stockpiles, as well as exposure of stockpiles to wind erosion; and Potential	Yes	Monthly

			increase of dust generation.		
		Noise	Potential increase of noise of hauling trucks to topsoil stockpile site.	Yes	Monthly
Placement of a fence	A fence will be constructed around the prospecting site which will be limited to the demarcated area to protect the workings and prevent people and domestic animals from harm	Animal life	Potential limitation of movement for domestic animals to grazing areas. This is a positive impact as it will prevent movement of domestic animals into demarcated areas, thus preventing injury.	Yes	Prior to construction
		Interested and Affected Parties	The fence could prevent access to communal agricultural	Yes	Prior to construction

			fields and livelihood. Also, the fence will provide a safety factor, preventing access to areas where safety risks may occur.		
		Groundwater	Potential groundwater contamination due to the infiltration of surface water contaminated with spilled hydrocarbons, chemicals.	Yes	Prior to construction
Use of Hydrocarbons, Chemicals	The use of hydrocarbons, chemicals will take place and these will be stored on site in designated storage	Soil	Potential soil contamination.	Yes	Weekly
		Land Capability	Potential decreased land capability due to contaminated soil.	Yes	Weekly
		Natural	Potential	Yes	Monthly

	areas.	Vegetation	damage due natural vegetation and loss due to spillages of hydrocarbons , chemicals.		
		Animal Life	Potential injury or loss of animals due to spillages of hydrocarbons , chemicals.	Yes	Monthly
		Surface Water	Potential groundwater contaminatio n due to the infiltration of surface water contaminated with spilled hydrocarbons , chemicals.	Yes	Monthly

		Groundwater	Potential groundwater contamination due to the infiltration of surface water contaminated with spilled hydrocarbons, chemicals.	Yes	Monthly
Access Roads	Existing Access Roads will be used to access the site and to transport equipment onto and off the site. If need be, they will be upgraded	Soil	Upgrading of existing roads to will cause a potential to result in soil erosion, soil loss.	Yes	During Construction
		Land Capability	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads; Site clearing	Yes	During Construction

			and removal of topsoil could lead to soil erosion and soil loss.		
		Natural Vegetation	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads; Site clearing and removal of topsoil could lead to soil erosion and soil loss.	Yes	During Construction
		Surface Water	Altered surface flow dynamics due to removal of topsoil and topographical alterations and increased surface runoff from cleared	Yes	During Construction

			areas; Potential surface water runoff over haul roads will result in erosion and consequent siltation of surface water resources; Potential contaminatio n of surface water runoff from hauls roads due to the spillage of hydrocarbons from vehicles travelling on haul roads.		
		Air Quality	Potential dust pollution caused by construction vehicles	Yes	During Construction
		Noise	Potential elevated noise levels due to continuous	Yes	During Construction

			vehicular movement on haul roads.		
Drilling, trenching and pitting	The use of machinery to dig up soil (either soft or hard) to extract materials/minerals	soil	Removal of topsoil could damage the natural soil structure due to soil handling, removal and mixing of soil types and horizons resulting in increased erodibility of soils due to damage to the natural soil structure; potential soil contamination sourced from hydrocarbons	Yes	Weekly
	The use of machinery to dig up soil (either	Land Capability	Removal of topsoil could damage the natural soil	Yes	Monthly

	soft or hard) to extract materials/minerals		structure due to soil handling, removal and mixing of soil types and horizons resulting in increased erodibility of soils due to damage to the natural soil structure; potential soil contamination sourced from hydrocarbons		
	The use of machinery to dig up soil (either soft or hard) to extract materials/minerals	Surface Water	Potential contamination of surface water due to spillage of fluids	Yes	Monthly
	The use of machinery to dig up soil (either	Air Quality	Potential pollutants of air from machinery	Yes	Monthly

	soft or hard) to extract materials/minerals		and vehicular emissions		
	The use of machinery to dig up soil (either soft or hard) to extract materials/minerals	Natural vegetation	Disturbance of vegetation could result in soil erosion due to exposed soils	Yes	Monthly
	The use of machinery to dig up soil (either soft or hard) to extract materials/minerals	Animal life	Disruption of animal habitats such as nests and breeding grounds (potential modification, fragmentation, and reduction of habitat).	Yes	Monthly

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

6.1 Rehabilitation plan

Infrastructure areas

On completion of the prospecting operation, the various surfaces, including the access roads, the office area, storage areas and the plant site, will finally be rehabilitated as follows:

All tailings or other material on the surface will be removed to the original topsoil level. This material will then be backfilled into open excavations. All infrastructures, equipment, plant, and other items used during the operational period will be removed from the site
On completion of operations, all buildings, structures or objects on the office site will be dealt with in accordance with Regulation 44 of the Minerals and Petroleum Resources Development Act, 2002, which states that when a prospecting right lapses, cancelled or abandoned or when it has come to an end the holder of such right may not demolish or remove any building, structure or object

Rehabilitation of the mobile office, workshop & storage areas

On completion of the prospecting operation, the mobile containers will be removed from site where after the above areas will be cleared of any remaining contaminated soil which will be placed in acceptable containers and removed with the industrial waste to a recognized disposing facility or by a waste removal company

All buildings, structures or objects in the secured storage areas shall be dealt with in accordance with the Regulation 44 of the Minerals and Petroleum Resources Development Act, 2002

Rehabilitation of dangerous excavations

Due to the removal of surface ore material, excavations will be created that can be classified as dangerous. All available material will be used during backfilling to avoid the existence of dangerous open excavations

Rehabilitation of rubbish waste Rubbish and waste

- Rubbish material should be removed from a work site or survey area at the completion of works. Where site occupation is prolonged, periodic removal of rubbish may also be required. Rubbish should be disposed of at an appropriate rubbish disposal site. Redundant equipment should also be removed from the licence area.
- Work sites should be provided with a rubbish receptacle to facilitate rubbish removal at the completion of an operation.
- Portable self-contained toilet facilities should be provided at work sites, such as drill sites. Toilet waste from portable toilets should be removed from the site periodically, and disposed of at a site appropriate for such waste.

a) During the course of a survey, particularly one requiring foot access by field parties (such as a soil sampling survey), personnel should ensure that any rubbish generated by them is not discarded in the survey area, but brought back and disposed of in the proper manner. During surveys of this type, solid toilet wastes should be buried

Rehabilitation of Vegetation

- Standard conditions require that vegetation removal be kept to a minimum. Where possible, locate vehicle access tracks at a reasonable distance, normally at least 2m, from trees greater than 150mm in diameter. Minimal tree trimming to gain access for vehicles is preferable to felling. Where trees have to be removed, timber should be cut and moved to one side of the

track to allow salvage. Trees should be cut at the base at a height equal to the diameter of the tree rather than uprooted, to allow coppicing.

- Where rehabilitation back to a cover of native vegetation is to be undertaken, species native to the local area should be used
- Follow-up surveys at appropriate intervals should be undertaken after planting to ensure that successful re-vegetation has been achieved

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

The closure objectives include the following:

- To comply with local regulatory requirements and international best practice;
- To address all relevant stakeholder issues and concerns;
- To identify all knowledge gaps that require further investigation;
- Form active partnerships with local communities where possible;
- To implement progressive rehabilitation measures, leaving a safe and stable environment for communities and animals;
- To ensure that the rehabilitation efforts do not impact adversely on public and employee health, safety and welfare;
- To prevent or mitigate adverse environmental effects;
- To maintain and monitor all rehabilitated areas and to ensure closure objectives are met;
- To enhance positive socio-economic impacts in the area in which the operation is located following decommissioning and subsequent rehabilitation and closure by achieving sustainable land-use conditions similar to that which existing prior to the mining, or alternatively as agreed with the applicable government regulator and affected communities; and
- To avoid or minimise costs and long-term liabilities to the company and to the government and public.

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).

Consultation was done engaging Landowners, communities and interested and affected parties and the documents that serves as confirmation has been attached to this EMPr

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)

A newspaper advert was published on Streek Nuus newspaper to notify all the interested and affected parties. Emails were also made to try and identify the landowners. Site notices were also posted on the nearby farm fence, municipality offices, public library, and also the BIDs, together with comment sheet, were handed to the interested and affected parties. The department of Rural Development was also notified of the prospection operation and an email was sent requesting more information about the land claim

7.2 The details of the engagement process.

The interested and affected parties were notified through site notices, Background Information documents which was distributed to them and also through newspaper advert in Streek Nuus local newspaper. Any information that will be provided by the community, landowners, and interested and affected parties will be taken into considerations and forwarded to the DMR offices for considerations.

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

The land owner, all interested and affected parties were provided with the Background Information Document (BID). The applicant details (telephone; email, mobile contact number, postal address and Company registration number, etc.); details of the proposed project. The land owners, Interested and affected parties will be provided with the draft environmental management plan upon their request.

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

CONTACT PERSON	ORGANISATION	CONTACT DETAILS
District and Local Government		
Cullinan District municipality		
R.A Serumula	Land claims commissioner: Regional Offices (Department of Rural Development)	012 310 6552
INTERESTED AND AFFECTED PARTIES		
Mr Gabriel Johannes Jacobus Diedorick	Community member	083 5642023
Mr Johan Goose J.C	Community member	060 331 7551
Mrs Sheila Goose	Community member	071 329 1295
Mr Riaan Timm	Community member	071 345 6148

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

Meeting will be arranged and held with the interested and affected parties to hear their views

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.

Job creation

The socio-economic conditions of persons on and non-adjacent will be affected by the proposed mine operation. This is because the project has a potential of creating jobs and as such reducing the poverty levels in the area.

Infrastructure development

The conditions of roads and other infrastructures in the area will be improved. Projects implemented by the nearby community for the benefit of the entire community (i.e. Youth Training Programmes; ABET and Environmental awareness) might receive support from the project. Community based Organisations will also receive financial support from the proposed project. If the project continues to a mining stage, people from surrounding communities will receive support (bursaries, etc.) from the mine to study at Universities and further education and training mostly in areas of science and technology. This will enable them to get good and better paying jobs as such improving their lives.

People from the nearby areas will gain experience in the field of mineral exploration and this will enable them to get better jobs in the mining industry which in turn will help in reducing the poverty levels in the Province. Businesses providing accommodation and catering services will benefit from the proposed operation because people from outside the project area who will be involved in the project will require their services and as such increasing the income or profits of the said businesses.

7.2.5 Other concerns raised by the aforesaid parties.

None received at the moment

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

So far no meeting have been held with the land owners or interested and affected parties. If any meeting will be held minutes will be attached as well

7.2.7 Information regarding objections received.

None received at the moment

7.3 The manner in which the issues raised were addressed.

All the issues that have been raised have not yet been addressed. We are in a process of organising a meeting with the land owners and I& AP's to address this issues.

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

8.1 Employee communication process

An environmental Awareness and Risk Assessment Schedule have been developed and is outlined on the table below. The purpose of this schedule is to ensure that employees are not only trained but that the principles are continuously re-enforced

Frequency	Time allocation	Objective
Induction(all staff and workers)	1 hour training Environmental awareness training as part of induction	-Develop an understanding of what is meant by the environment by the environmental and social environment and establish a common language as it relates to environmental, health, safety, and community aspects -Establish basic knowledge of environmental legal framework and consequences of non-compliance -Clarify the content and required actions for the implementation of the Environmental Management Plan -Confirm the spatial extent of areas regarded as sensitive and clarify restrictions -Provide a detailed understanding of the definition, the method for identification and required response to emergency incidents
Monthly Awareness Talks (all staff and workers)	30 minutes awareness talks	Based on actual identified risks and incidents (if occurred) reinforce legal requirements, appropriate responses and measures for the adaptation of mitigation and/or management practices

Risk Assessment (supervisor and workers involved in task)	10 minutes task based risk assessment	Establish an understanding of risks associated will a specific task and the required mitigation and management measures

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)

Responsibility could come in many different forms, they include testing machinery regularly, providing adequate safety equipment, personal protective equipment required, fire fighting measures and decomposition products of the material, chemical re-activities and incompatibilities, spill and leak handling procedures and disposal procedures. To avoid or minimise the impacts on the heritage resources all Randquip Pty Ltd employees and other contractors involved in the project will be briefed in their induction to report any sign of buildings, structures or evidence of cultural site of any sort and to stop work until the site has been investigated by an accredited person

8.3 Environmental awareness training.

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

An environmental awareness programme document is attached on **Appendix C.**

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)

Item	**Cost (in Rands)**
Transportation/establishment of all equipment	2000
Cost of decommission and associated infrastructure	17000
Labour cost	6000
Cost of profiling disturbed areas	4000
Cost of replacing top soil*	0
Cost of re-vegetation	2000
Aftercare and maintenance	4000
Total	**35000**

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

The total amount required to finance the work programme is **R350 000** as reflected in the PWP, however **R35 000** will be set aside for environmental rehabilitation purposes

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	**Mutshena Mpho**
Identity Number	**8212280541080**
Signature	

-END-

APPENDIX A: ACCEPTANCE LETTER

APPENDIX B: MAPS

APPENDIX C: CONSULTATION DOCUMENTS

APPENDIX C_1: LETTER TO STAKEHOLDER

APPENDIX C_2: BACKGROUND INFORMATION DOCUMENT

APPENDIX C_3: PICTURES OF SITE NOTICE

APPENDIX C_4: ADVERT

APPENDIX C_5: DATABASE LIST FOR REGISTERED I&Aps

APPENDIX D: ENVIRONMENTAL AWARENESS PROGRAMME

APPENDIX E: LAND CLAIM LETTERS